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ABSTRACT

Eleven articles on various aspects of financial planning for educational services comprise this document, volume three of the NEFP series. Volume one of this series deals with educational needs, volume two with economic factors and education, and volume four with the impact of educational financing programs. The material in this volume describes financing programs and discusses problems in financial planning for public instruction programs from preschool through community college and adult education, including programs for exceptional children, the culturally deprived, and vocational education. Additional discussions on planning school facilities finance, food service costs, and student transportation, as well as on fiscal capacity and district reorganization are provided. Related documents are EA 003 536, EA 003 539-543, PS 004 503, ED 043 697, ED 047 230, ED 045 068, ED 043 968, ED 046 071-072, EA 003 537, ED 036 007, and EA 003 673. Funding for this research was provided by an ESEA Title V grant. (RA)

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Planning To Finance Education

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NATIONAL EDUCATIONAL
FINANCE PROJECT

Volume 3

1

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Planning To Finance Education

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TABLE OF CONTENTS

CHAPTER 1

Early Childhood And Basic Elementary And Secondary Education

William P. McLure, Director
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Audra May Pence
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CHAPTER 2

Resource Configurations And Costs In Educational Programs For Exceptional Children

Richard A. Rossmiller, Professor
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CHAPTER 3

Educational Programs For The Culturally Deprived

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and
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CHAPTER 4

FINANCING VOCATIONAL EDUCATION IN PUBLIC SCHOOLS

Erick L. Lindman
Professor of Education
University of California
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and
Arthur Berchin
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CHAPTER 5

FINANCING ADULT AND CONTINUING EDUCATION

J. Alan Thomas, Dean
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University of Chicago

CHAPTER 6

THE COMMUNITY JUNIOR COLLEGE: TARGET POPULATION PROGRAM COSTS AND COST DIFFERENTIALS

James L. Wattenbarger, Professor and
Director, Institute of Higher Education
University of Florida

CHAPTER 7

FINANCING PUBLIC ELEMENTARY AND SECONDARY SCHOOL FACILITIES

W. Monfort Barr
Professor of Education
Indiana University
and
K. Forbis Jordan
Professor of Education
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CHAPTER 8

The National School Food Service And Nutrition Education Finance Project

Robert J. Garvue
Professor of Educational Administration
Florida State University

Thelma G. Flanagan
Administrator of Food and Nutrition Services
Department of Education
State of Florida
and
William H. Castine
Assistant Professor of Education
Florida A. and M. University

CHAPTER 9

Pupil Transportation

Dewey H. Stollar
Professor of Education
University of Tennessee

CHAPTER 10

Fiscal Capacity And Educational Finance

Richard A. Rossmiller, Professor
Educational Administration
University of Wisconsin

CHAPTER 11

THE RELATIONSHIP OF SCHOOL DISTRICT REORGANIZATION TO STATE AID DISTRIBUTION SYSTEMS

Clifford P. Hooker, Chairman
Division of Educational Administration
University of Minnesota
and
Van D. Mueller, Assistant Chairman
Division of Educational Administration
University of Minnesota

APPENDICES

Appendix A: School Population Estimates
Appendix B: Data Form 1 (Regular School Year)
Appendix C: Data Form 11 (Summer School Programs)
Appendix D: Data Form 111 (Part-Time Programs)

8

Foreword

The National Educational Finance Project was instituted on June 10, 1968. This three year project is the first comprehensive national study of school finance made since 1933. The ultimate objective of this project is to devise and evaluate alternative models of school finance and to develop methods which can be utilized by educators and legislators in evaluating and improving existing methods for financing education at the state and federal levels. Researchers from throughout the nation, including experts from universities, state departments of education, and other agencies are involved in the study.

This third volume of the National Educational Finance Project contains summaries of each of the satellite projects which serve as one of the primary data sources for the Project. In designing the study of the financing of education from early childhood through junior college, the Project Committee and the staff recognized that any rational study of school finance should begin with a study of educational needs. The purpose of the satellite projects was to present an analysis of the dimensions of educational need in each of the areas which constitute the first nine chapters of this volume. The two concluding chapters, "Fiscal Capacity and Educational Finance" and "The Relationship of School District Reorganization to State Aid Distribution Systems", provide another type of supporting data for the generation of the fiscal plans which will be designed in the latter stages of the project.

In each of the satellite projects the investigators sought to: (1) identify or develop criteria for identifying the target population to be served, (2) develop accurate estimates of the number of persons in each target group, (3) indicate the nature of educational programs needed to meet the needs of each target group, i.e., how they differ from the regular or basic educational program, and (4) determine the cost differentials implicit in each program.

As will be noted in the chapters which comprise this volume, various types of barriers were encountered which prevented the researchers from attaining complete achievement of each goal. One of the problems was associated with population projections. The latest decennial census data were nearly ten years old which complicated the task of projecting total populations and various subgroups to the 1980 date. The other common problem was related to the lack of adequate and consistent program accounting information which could be used in projecting cost differentials. Rather than being provided with a common information base, each satellite project virtually built its own information base upon which the cost differentials were developed. In spite of these limitations, however, the basic information upon which the cost differentials were projected is theoretically sound and the findings of these studies make a significant contribution to the body of research related to educational finance.

Each of the satellite studies was conducted by a team of researchers in the field of school finance in cooperation with specialists in the particular programmatic area of the study. Each research team assumed individual responsibility for the collection, assimilation, analysis, and projection of data pertinent to its study. For this reason, variances will be observed in the population projections and other types of common data among the several studies. Various assumptions were used in making the projections, and no attempt was made to force consensus on each of the several research teams. For additional information relative to the rationales and assumptions which underly the projections in each study, copies of the complete studies may be obtained directly from the authors of each satellite study.

Subsequent volumes to be published by the National Educational Finance Project include the central staff studies dealing with measures of fiscal capacity and analyses of existing programs and the final report which will contain the summary of the project findings and the various models which have been generated through the project.

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CHAPTER 1

Early Childhood And Basic Elementary And Secondary Education

WILLIAM P. MCLURE
AND
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Perhaps at no time in the history of this nation have the public schools been subjected to such intensive consideration as today. Criticisms, speculations, and prescriptions are rife. Never have more untested propositions been asserted with greater alacrity.

The role of the schools in society is taken seriously. To some persons these institutions are partly responsible for many social problems. Others see the shortcomings of schools to accomplish for their children what their schools failed to help the older generation achieve. Many citizens are genuinely concerned because they fear uncertain alternatives to public education. They see systems, riddled though they may be with needs, possessing great strength and potential.

No institutions have more open doors to society than the public schools, despite some claims to the contrary. For this reason it is understandable why the schools reflect the concerns, the doubts, the aspirations, and the basic confidence of the nation. Thus, the responses of persons in the sample of school districts in this study mirror the dominant needs and objectives of education.

Thirty-one public school systems cooperated in this study. They included twelve great cities, nine large suburban districts adjacent to great cities, and ten districts outside of large metropolitan areas, including three districts with large components of Indian population.

There were schools in seven agencies of the Bureau of Indian Affairs. There were six centers of the National Laboratory on Early Childhood Education. Several programs of Head Start, Follow Through, Child Day Care Centers, and other special programs were included.

Members of the staff visited selected schools in each of the cooperating districts and other agencies. Field observers interviewed staff members and students to obtain their views on educational needs. They collected data on programs, facilities, and personnel. Twenty-eight districts submitted additional data on distributions of pupils, staff, and expenditures for a cost analysis of programs.

In addition the staff of this study has made an exhaustive review of the literature of the past quarter of a century. Many contemporary researchers and program developers have contributed information through personal interviews, conferences, and recent writings. Thus, the study has drawn upon a wide range of human experience and judgment as it has focused on the identification of major educational needs in the decade of the 1970's.

DIMENSIONS OF NEEDS

All educational considerations are founded on basic human needs that embrace the individual and society. The needs of one are essential to the other. In this study the focus is on the individual without any effort to trace out all the social implications.

Needs of the Individual

The basic needs of the individual may be defined in terms of personal, vocational, and social characteristics for effective satisfaction and performance. The schools are concerned with the total development of the child. His personal qualities include physical and emotional well-being; intellectual growth; a set of values; behavioral qualities of creativity, motivation, and self-control; self-direction; talents and avocational interests; and qualities of adaptability and cooperation. His vocational development involves the learning of essential skills that are required in his chosen occupation. His social development involves the learning of skills in working with others and the exercise of responsibility as a member of various groups in society.

These needs have to be defined in specific terms for all stages of the individual's life. They serve as guides for the educational objectives of every generation.

Needs of the School System

The needs of the school system are defined in terms of educational objectives to meet the needs of individuals. There seems to be a firm national goal in America to provide equal educational opportunity for the development of every individual to the fullest of his capacity and his motivation to help himself.

The public schools have a mandated responsibility to implement this objective. The home, the church, and other institutions have unique responsibilities which cannot be overlooked, though they are not treated in this study.

In this study the needs of the school system are described in operational terms that are formulated within this broad educational objective and the vast body of knowledge about the developmental needs of individuals. The institutional needs may be summarized in three categories: extension of early childhood education, improvements in elementary school education, and improvements in secondary school education.

EARLY CHILDHOOD EDUCATION

Early childhood education includes children below six years of age. There is a wide range of organized activities that are defined as alternative programs which school systems can operate. All of these included in this study are in operation in varying degrees. The kindergarten, primarily for 5-year-old children, has a long history, and it is widely disseminated.

Programs for younger children are less widely established, but there has been sufficient experimentation during the last few decades to develop dependable knowledge of what can be done in formal school environmental conditions for children beginning about age three. The knowledge of child development under three years of age is not sufficiently developed to propose formal schooling. Perhaps the next five to ten years may produce enough knowledge for this purpose.

There are five of these programs that should be established and expanded as an integral part of elementary education in public school systems in the 1970's. Before listing these programs a summary of the early childhood school population may be helpful. The Bureau of the Census has two series of population estimates for ages under 5, 5-17, and under 18 based on high and low fertility rates. By subtractions the census data give the estimates of 5-year-olds. From these estimates and actual data for age groups under 5 years in 1968, we have prepared estimates for ages under 3 years, 3-year-olds, and 4-year-olds. The average estimates for children below 3 years of age are 10.896 million in 1970 and 14.096 million in 1980. The respective estimates for ages 3 and 4 are 7.930 million in 1970 and 10.258 million in 1980. The average estimates for 5-year-olds are 4.609 million in 1970 and 5.962 million in 1980. All of these age groups will increase in size. These trends will have an important bearing on needs and demands for educational programs.

The trends of enrollments of these age groups from 1964 to 1968 are important to note in relation to estimated programs for the next decade. The enrollments increased as follows: 3-year-olds from 4.3 percent to 8.3 percent; 4-year-olds from 14.9 percent to 22.8 percent; 5-year-olds from 58.1 percent to 76.8 percent.

These increases indicate a response of the public to available programs. As time passes and parents observe the effects of these programs on the development of their children their attitudes change from guarded optimism to firm aspiration, and finally to public demand. Table 1-1 shows the trends of the 3, 4, and 5-year-old population groups and the respective enrollments in school from 1964 to 1968, inclusive.

TABLE 1-1

TRENDS OF EARLY CHILDHOOD POPULATION
AGES 3-5 AND SCHOOL ENROLLMENTS

October 1964 to October 1968
(Numbers in Thousands)

	3-Year-Olds		*4-Year-Olds*		*5-Year-Olds*	
Year	*Pop.*	*Enrollment*	*Pop.*	*Enrollment*	*Pop.*	*Enrollment*
1964	4,238	181	4,148	617	4,110	2,389
1965	4,149	203	4,238	683	4,162	2,521
1966	4,087	248	4,155	785	4,244	2,641*
1967	3,992	273	4,088	872	4,162	2,724*
1968	3,811	317	4,000	911	4,095	2,701*

*Excludes 5-year-olds enrolled in primary school.
1966 — 505,000
1967 — 444,000
1968 — 444,000

Source: Nehrt, Roy C. and Hurd, Gordon E. *Preprimary Enrollment of Children Under Six*, October 1968. U.S. Department of Health, Education, and Welfare. Office of Education. June 1969. OE-20079-68.

Parent Education

Programs of parent education are formally organized activities of instruction and counseling in the home, and occasional meetings with groups. These programs are aimed at instructing the parents how to direct and guide some special activities of children in their personal development. There are activities for parents of children not in school, and others for those with children in a school program.

This study proposes a minimum development of these programs by the public schools in 1980 to reach the parents of 3 million children under 3 years of age. This estimate is for somewhere between one-fourth and one-third of the parents who would not be involved in parent programs in connection with other children in the family who might be enrolled in school. The target population would include parents on welfare, low income, low educational level of attainment, and other indicators of environmental disadvantages for children. Methods of identifying the parents would consist of surveys and diagnostic procedures. The minimum cost of this program at 1969 prices is estimated at 0.93 percent of the total public school budget for current expenses. The amount would be about $270,000,000. The cost of an instructional unit (20 mothers) is computed at one-tenth the cost of a comparable number of 3 and 4-year-old children.

All other programs have built-in components of parent education for the respective children who are enrolled. These estimates include about one-third of all mothers with children under 5 years of age. It is assumed that all mothers of 5-year-old children will have access to a parent education program for appropriate participation in the kindergarten.

Day Care Centers

This study proposes that public school systems establish day care centers for a minimum of 681,000 children under 6 years of age by 1980. An equal number is estimated to be enrolled in private institutions. These programs should be well planned to reinforce the experiences of the children in the educational programs. They are to be operated by a staff with some professional training or under the supervision of persons with this training.

The target population for these centers would primarily include children from low income families whose mothers are away from home during the day for work, illness, and emergencies.

These programs are estimated to cost 2.11 percent of all operating expenses of schools at 1969 prices. The minimum estimate is $612,900,000 per year. In addition, the public schools should operate programs of consulting services to private day care centers. These services would be similar to those provided for their own day care centers by the professional staff in the educational programs at an estimated cost of one-tenth the amount per instructional unit in school. The cost of these services is estimated at $61,290,000 per year, or 0.21 per cent of all public school operating expenses.

Day care centers have special needs including appropriate outdoor and indoor space for meaningful play, recreation, lunch service, and rest. The standards for staffing, activities, and facilities in all centers, public and private, should meet the minimum requirements for programs that are approved for Federal aid.

Nursery School: 3-4 Year-Olds

Some authorities advocate formal schooling that is suitably organized for children as young as two years of age. Most authorities prefer three years as a minimum age except children with special handicaps. These should be started on an appropriate remedial program as soon as difficulties are identified, regardless of age.

There is general agreement among educational leaders in this study, and among scholars in the literature, that nursery schools for 3- and 4-year-old children should be established by the public school systems and operated as an integral part of elementary education. To be successful an instructional unit should be staffed with a teacher and two aides for each 15 to 20 pupils. The school day should consist of about 2½ to 3 hours of pupil attendance. Mothers of the children would participate in observation, assist the teacher, confer with the teacher, and perform other activities comprising the parent education program as discussed in the preceding section.

An instructional unit requires space of 1,500 to 2,000 square feet for 15 to 20 children. This amount, if properly planned, provides for organization of about six activity areas for free movement of children and appropriate activities of group and individual nature. The space should be self-contained with toilet, water, storage of clothing, and other facilities. In addition, outside space especially developed for play is essential.

Supportive services for diagnosis, health, food service, and others should be available. Where space can be designed for team effort one teacher and four aides can manage two groups of not more than 20 pupils each, supplemented by voluntary assistance of mothers.

Teachers should have only one session per day. After children are dismissed the teacher devotes the remainder of the day to two types of activities. One is planning and supervising the preparation of materials for the next day. The other one is conducting the parent education program with mothers of the children.

Three levels of programs are estimated for development in the public schools by 1980: low demand—2,866,000 pupils; medium demand—4,699,000 pupils; and high demand—6,034,000 pupils. These projections are exclusive of about 663,000 pupils estimated to be in nonpublic nursery schools. Combined estimates are shown in Table 1-2.

TABLE 1-2

PROJECTED POPULATION AND ENROLLMENTS FOR NURSERY SCHOOLS IN THE PUBLIC SCHOOLS: 3- & 4- YEAR-OLDS
1980

	Numbers in Thousands		
Projection (1)	*3-Year-Olds (2)*	*4-Year-Olds (3)*	*Total (4)*
1. Population[*]	5,004	5,254	10,253
(1) Number from families under $3,000[**]	500	525	1,025
(2) Number from families over $3,000[**]	4,504	4,729	9,233
2. Low Demand Enrollments	1,376	2,153	3,529[***]
(1) Families under $3,000[**]	250	262	512
(2) Families over $3,000[**]	1,126	1,891	3,017
3. Medium Demand Enrollments	2,000	3,362	5,362[***]
(1) Families under $3,000[**]	500	525	1,025
(2) Families over $3,000[**]	1,500	2,837	4,337
4. High Demand Enrollments	2,626	4,071	6,697[***]
(1) Families under $3,000[**]	500	525	1,025
(2) Families over $3,000[**]	2,126	3,546	5,672

[*] The mean of Series I-D and I-B projections of the Bureau of the Census. See Table 4.

[**] Estimates based on numbers of children from families reported in 1968.

[***] Including 663,000 in private schools, the number enrolled in 1968.

The bases for estimating these enrollments are as follows:

1. Low demand includes half of the estimated number of children from families with income under $3,000 per year at 1969 prices. The remainder would bring the total enrollment of 3-year-olds up to 27.5 percent of the estimated population of this age in 1980. Forty-one percent of the 4-year-olds would be enrolled. The respective enrollments in 1968 were 8.3 percent of 3-year-olds and 22.8 percent of 4-year-olds.

2. Medium demand includes all children from families with income under $3,000. The remainder would provide total enrollments equal to 40 percent of the 3-year-olds and 64 percent of the 4-year-olds.

3. High demand includes all children from families with income under $3,000. The remainder would provide total enrollments equal to 52 percent of the 3-year-olds and 77 percent of the 4-year-olds.

Enrollment of the target population would be based on diagnostic procedures of testing, conferences with parents, and other information on the pupils.

The costs of these three levels of operation would increase the school budgets at 1969 prices by 8.38, 14.06, and 18.20 percents respectively. In dollar amounts they are increases of $2.434 billion, $4.084 billion, and $5.216 billion respectively.

Kindergarten

Leaders in the schools of this study, and in the literature, strongly urge the reorganization of kindergartens. The first objective should be to abolish double sessions and establish programs consisting of single sessions each day of 3 to 3½ hours. Teachers should develop programs of parent involvement similar to the nursery programs, using the remainder of the day for these programs and preparation of materials. Supportive services for pupil diagnosis, health service, food service, and others should be available.

An instructional unit of minimum standards consists of a teacher and two full-time teacher aides, one of whom would be a mother, for 20 to 25 pupils. All mothers of the children would participate in a variety of ways as part of the parent education program.

The space for each instructional unit should have about 100 square feet per pupil, or a total of 2,000 to 2,500 square feet, exclusive of storage area. The classroom should be organized into about six activity areas with appropriate equipment. The room should be self-contained with toilet, water, storage of clothing, and other facilities. Outside space for play is essential. These children are ready to be introduced to a program of physical education under the direction of teachers with special training in this field. Part of their time would be spent in a gymnasium specially equipped for young children.

These changes would require an increase of $1.103 billion. This sum would increase the cost of kindergarten equal to 3.80 percent of the total current expenditures. The national expenditures for kindergarten in 1968-69 are estimated to be 2.7 percent of current expenditures.

The second objective for kindergartens is to make these programs universally available by 1980. This objective would add 950,000 5-year-olds not enrolled at present plus an estimated 1,867,000 additional children from increased population by 1980.

These changes will require additional space, facilities, and staff. At 1969 prices the total current expenditures would be increased 12.53 percent. The total of these changes amounts to $3.639 billion.

Special Programs for Children Under Six Years of Age

In the analyses of program costs in the districts of this study, children under six have not been designated in special programs. We assume that the age distributions in these programs in 1980 will be about the same as in 1970. This may be reasonable since technological devices for individuals with certain difficulties such as impaired hearing and sight may reduce the amount of specialized treatment in small groups. These numbers may be offset by increases to be found in the younger ages as diagnostic procedures are improved.

SPECIAL PROGRAMS

The special programs in this study are classified into four categories: (a) classes for mentally and physically handicapped individuals, (2) remedial instruction and counseling for pupils with severe social and emotional difficulties, (3) remedial instruction and counseling for pupils with other learning difficulties, and (4) vocational education. These categories are used because they identify programs that are in operation to serve pupils with special needs.

Since there are other special studies on these programs they have not been examined in detail in this project. It has been necessary to measure their relative magnitude in terms of enrollments and costs. On these measures they are put into perspective with basic elementary and secondary education programs.

Table 1-3 shows a distribution of pupils enrolled in special programs, expressed as mean percents of total gross enrollments in grades 1-12. Also, this table shows the additional percents of the total that should be enrolled. The sum of these two percentages represents the estimated need to be served in the respective programs.

TABLE 1-3

DISTRIBUTION OF PUPILS IN SPECIAL PROGRAMS
- Actual Enrollment Plus Number Qualified But Not Enrolled -
1968-69

	Pupils Expressed As Percent of Total Gross Enrollment in Grades 1-12				
	Cities	*Suburbs*	*Independents*		
Program *(1)*	*12 Dists. (2)*	*8 Dists. (3)*	*All 8 Dists. (4)*	*Indian* 3 Dists. (5)*	*Others 5 Dists. (6*
Mentally & Physically Handicapped, Grades 1-12					
Actual	2.5%	1.2%	1.2%	0.7%	1.5%
Qualified But Not Enrolled	0.7	0.7	0.6	1.5	0.4
Sub-Total	3.2	1.9	1.8	2.2	1.9
Socially Maladjusted, Grades 1-12					
Actual	0.7	0.3	0.0	0.0	0.0
Qualified But Not Enrolled	1.1	1.3	**	**	**
Sub-Total	1.8	1.6	0.0	0.0	0.0
Remedial & Compensatory, Grades 1-12					
Actual	3.0	2.6	8.0	10.7	6.7
Qualified But Not Enrolled	9.1	0.4	6.5	15.7	1.9
Sub-Total	12.1	3.0	14.5	26.4	8.6
Vocational-Technical, Grades 7-12					
Actual	3.5	1.7	5.0	7.4	3.4
Qualified But Not Enrolled	3.5	1.4	4.4	4.4	0.0
Sub-Total	7.0	3.1	9.4	11.8	3.4
All Special Programs, Grades 1-12					
Actual	9.7	5.8	14.2	18.8	11.6
Qualified But Not Enrolled	14.4	3.8	11.5	21.6	2.3
Sub-Total	24.1	9.6	25.7	40.4	13.9

*Three Independent districts with 30 to 70 percent Indian pupils.
**No estimates provided.

Programs for Mentally and Physically Handicapped Pupils

In recent decades much knowledge of individuals with severe handicaps of all kinds has come from research and experimentation in this field. Leaders in the districts of this study estimate that the number of individuals qualified for enrollment in these programs is about as large as the number presently enrolled. The increase would result from admission of qualified pupils because school systems do not have adequate facilities and resources to accommodate all of them.

These estimates will increase present school expenditures by an estimated 2.30 percent, amounting to $669,000,000.

Programs for Pupils with Severe Social and Emotional Difficulties

This is an area of great public sensitivity. Nearly half of the districts in this study report only a few, if any, pupils in this category. Some do not have programs other than the regular counseling and psychological services. A few districts operate special schools and programs for pupils who are emotionally ill, for delinquents, and for those with other difficulties. Some pupils with severe maladjustments drop out of school and fail to appear on the roster of this classification.

Among the districts that report data, the officials estimate that the number of students in need of special assistance in this category is about twice the number enrolled at present. Eight of the cities in this study spend one percent of the operating budget on these programs. The estimated need is an increase of 2.0 percent of all current expenses, or $581,000,000.

Remedial and Compensatory Programs

These programs are operated in all districts of this study except one city and two independents (nonmetropolitan). They represent a wide range of additional counseling and instructional services, thus increasing the inputs of staff time above the requirements of most pupils.

These programs operate on the principle of diagnosing the learning difficulties of the individual and providing all known assistance to accomplish as much correction as possible. This approach is more positive and comprehensive than the early concept of remediation. It is a totally adaptive experience rather than a mere additive. For this reason a more appropriate title for these programs may have to be devised in the future.

The districts with large proportions of Indian pupils appear to have the greatest percentage of the school population in need of these programs. The cities have the second highest. The nonmetropolitan areas are next, followed last by the suburban communities.

The average need for all districts is estimated to be 4.91 percent of the present operating budget. This amounts to $1.426 billion.

Eventually, the magnitude of these programs may be reduced by modifications such as expansion of early childhood programs. The same may be said for the programs for pupils with severe social and emotional difficulties. Thus, the school system must possess flexibility to modify programs as needs of the school population shift.

Vocational-Technical Programs

The definition of Federally reimbursable courses used in this study is found to be inadequate either to identify all vocational education or to estimate the needs of the future. The responses of leaders and teachers suggest that the curriculum in vocational education should be revamped. There should be a sequence of pre-vocational courses beginning in the middle school and culminating in a broad vocational offering in the high school.

The minimum estimates of need during the next decade are increases of three times the present enrollments. These enrollments would amount to an increase of 6.0 percent of present operating expenditures, or $1.742 billion.

BASIC ELEMENTARY EDUCATION

In this study basic elementary education includes everything in grades one through six except the special programs that have just been described. With few exceptions, such as the self-contained classrooms for the mentally and physically exceptional children, the special programs are extensions of basic programs. In some cases they are additional services. In others they are different instructional activities which afford alternative choices to students.

A summary of the percentage distribution of pupil enrollments by programs in relation to the total gross enrollment in grades 1-12 is shown in Table 1-4. For example, in the cities the enrollments of pupils in special programs are 9.7 percent of the total gross enrollment in grades 1-12. Most of the pupils in special programs spend only part of their time in these programs and the remainder in the basic programs.

TABLE 1-4

Distribution Of Pupils By Programs
1968-69

	Cities	*Suburbs*	*Independents*		
Program			*All*	*Indian**	*Others*
	12 Dists.	*8 Dists.*	*8 Dists.*	*3 Dists.*	*5 Dists.*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Elementary and Secondary:					
1. Special Programs (Grade 1-12)	9.7%	5.8%	14.2%	18.8%	11.6%
2. Basic Elementary Grades 1-6	50.1	48.0	42.1	45.3	39.9
3. Basic Secondary Grades 7-12	40.2	46.2	43.7	35.9	48.5
4. Total Gross Enrollment Grades 1-12	100.0	100.0	100.0	100.0	100.0
Early Childhood:					
5. Pre-Kindergarten	0.5	1.7	2.9	8.1**	0.3
6. Kindergarten	7.7	8.0	8.2	7.1	8.7

*Three Independent districts with 30 to 70 percent Indian pupils.
**One district.

The enrollments in the early childhood programs are separate but they are shown as percents of enrollments in grades 1-12 for comparative purposes. In the fall of 1968 the national average of prekindergarten enrollment in the public schools was about 1.4 percent of the enrollment in grades 1-12. In this study the range among districts was from none to about 3.0 percent with one exception shown in Table 1-4.

The Needs of Individuals

The needs of individuals in elementary school encompass their total personal and social development from about age six to twelve. The classroom is where diagnosis, activity, and change occur. The needs have to be expressed for every individual. Any description on a group basis loses much of the vital information that the teacher uses in the day to day interaction that is directed toward each individual. The volume of data on individuals is too great for treatment except by groups. Hence, schools describe needs in terms of norms and deviations for general communication to the public.

The period of maturation from early childhood to adolescence is a critical one for every individual. His personality changes from a high degree of plasticity and dependence to one of greater rigidity and independence. These are the years when continuity of growth, motivation, and achievement is so vital to continued development during the succeeding years of adolescence.

Educational Objectives

The universal objective in school districts of this study is to focus all human effort and resources on the fullest development of every individual. This is a general goal that is a dominant theme in the literature. When this purpose is delineated in operational terms the specific objectives include matters like changes in the curriculum, organization of the school, instructional practices, and a host of others.

These objectives cover the total range of educational concerns of elementary education. They indicate the great complexity of education. They also express the urgency for keeping education dynamic and adaptive.

Needs of the Elementary Schools

When objectives are described in operational terms they become synonymous with needs of the system to accomplish given ends. Thus, the needs of the schools are summarized to indicate the changes, the reordering of inputs, and the additional resources that would be made in the next decade if the districts receive adequate funds to spend responsibly. This process of evaluating educational needs provides information for decisions on allocations of funds to education as compared with other social needs.

The goals of the 1970's for improvement of elementary education may be summarized in six major classifications:

1. *Organization*. The elementary school should be organized as an integral unit including all early childhood education and the grades that are commonly called one through five. The sixth grade should be combined with the seventh and eighth for the middle school.

The internal structure of the school should be reorganized with less rigidity in present grade levels to permit continuous progress of individuals, to revise the curriculum, and to change the instructional process.

2. *The Curriculum.* Universal suggestions for curriculum change are the following: (1) revise various areas of content, (2) improve the sequence of learning activities, (3) put more emphasis on the basic cognitive skills, (4) expand instruction for general appreciation and development of talent in the fine arts, (5) expand instruction in the practical arts, (6) expand programs of physical education to improve psychomotor development of pupils, and (7) strengthen instruction for knowledge of occupational fields.

3. *Instructional Strategies.* Changes in instructional procedures rank among the highest in priority of needs. They include the following: (1) modify the self-contained classroom with more team or group teaching, (2) differentiate the instructional activities through use of more specialists and more teacher aides, (3) provide more learning activities with programmed materials, (4) provide more nonsedentary activities for learning in laboratories that afford pupils opportunity to work with animals, plants, and objects of the arts and sciences, (5) provide children with a variety of opportunities to engage in effective dialogue with colleagues and the staff, and (6) provide teachers more time to interact with individuals.

4. *Supportive Services.* Teachers need supportive services from nonteaching specialists such as administrators, counselors, librarians, psychologists, social workers, and research personnel. The districts in this study average one specialist for each seven teachers in all grades from kindergarten through high school. The ratio in a sample of elementary schools in these districts is one for 12.5 teachers. The number of specialists in these schools should be at least comparable to middle schools and high schools.

5. *The Staff.* Schools must be able during the next decade to develop differentiated staffs. Teachers must be assisted in such ways as to free their time as much as possible to utilize their talents most effectively. One assistant teacher for each teacher is the minimum that is recommended in a sample of innovative schools. Nonteaching assistants for supportive services include professional (academic) personnel. In addition, personnel are necessary for such services as maintenance of buildings and equipment, food service, transporta-

tion, and health. The school of 1980 will need one staff member per teacher for all supportive services in the elementary schools.

6. *Instructional Materials and Facilities.* Next to personnel the physical environment is the most crucial factor in need of change. Every school observed in this study with a strong innovative thrust has been able to obtain new buildings and materials that were designed to serve the programs. Buildings have flexibility and a degree of openness for collaboration of staff groups. Space is designed in various clusters with some movable walls rather than the traditional single-room compartmental structure.

Instructional supplies are especially crucial. Schools will consume more supplies than formerly in all areas of instruction. Only a few schools have begun to experience the advantages of the newer instructional media such as computerized instructional units, closed circuit television, video tape recorders, and dial access systems to programmed sources of information.

Image of the 1980 Elementary Schools

The schools that can merge all of these changes into a rational plan of operation will have the best known chance of coping with the needs of all pupils. The school is too complex to make the necessary transformation in bits and pieces. People with ideas and purposes, plans and blueprints for operation, a functional physical environment, and support from the community are the basic components of a hospitable educational environment. This is the image expressed by teachers and other educational leaders in this study. This image is found in the writings of discerning students of education.

The Target Population

The projections of the Bureau of the Census show an increase of about 4.1 million persons in the 5-17 age group from 1970 to 1980 based on the assumption of high birth rates. Those based on the low birth rates show a decrease of 4.3 million persons in this age group. A median between these two would be a decrease of about 137,000 persons from 1970 to 1980.

The estimates for the ages 5 years and under show an average of 23.4 million in 1970 and 30.3 million in 1980, or a 29.4 percent increase. Estimates are not available for the ages 6 to 11, inclusive. However, the total of this age group will be little if any larger in 1980 than in

1970 due to the low point of birth rate appearing in 1968. The secondary school population, 12-17-year-olds, will increase slightly during the 1970's.

BASIC SECONDARY EDUCATION

Secondary education is treated as grades 7-8-9 for junior high school and 10-11-12 for high school because of this predominant pattern in the schools of this study. The organization that appears to be gaining favor is a middle school of grades 6-7-8 and a high school of grades 9-12. A campus with clusterings of buildings for instructional fields is gaining in favor. In large urban centers the grouping of grades 9-10 and 11-12 into separate buildings for most of the work, with sharing of some special facilities, is preferred in some communities to maintain operating units not to exceed 1,500 to 2,000 pupils.

Basic secondary education is defined as everything in grades 7-12 except special programs. This definition does not help to distinguish among the programs that are not classified as special. These programs are identified with the broad disciplines or fields of knowledge such as language arts, social sciences, physical sciences, mathematics, the arts, and physical education. Thus, the definitions of basic and special education have value primarily for operational distinctions in analyzing costs.

Needs of Youth

The period from 12 to 17 years is no less unique than younger ages. To most youth these are the decisive years, growing into adulthood and making decisions on occupational careers, admission to college, and others. The fundamental needs of these youth are to extend and to round out their personal and social development, and to acquire a good foundation of occupational skills.

Educational Objectives

The general cultural aim of education is equal educational opportunity for every individual to develop to the fullest of his capacity and his willingness to help himself. This ideal serves as a guide in defining and achieving operational objectives.

The leaders of the participating schools expressed their objectives of the 1970's in terms of needed improvements in the system. The major ideas are: more attention to the individual, revision of the curriculum, change in the instructional strategies, change in the human qualities of the school environment, integration of cultural groups, greater involvement of students in planning, greater variety and quality in learning materials, and more functional and adequate space.

The Educational Program

The top priority of need in every district is to increase the breadth of the educational program. Suggestions cover all phases of education including fields of cognitive knowledge, skills in written and verbal communication, vocational skills, and skills in social and civic responsibility.

Much emphasis is placed on prevocational and industrial arts in the middle school for larger numbers of students. Practical and fine arts are in need of expansion.

Leaders in the Indian schools strongly emphasize the need for a more comprehensive curriculum in the middle school and the high school. The range among these schools observed in this study is about the same as among other schools. Among the 30 innovative schools described in this study three are integrated schools with over 50 percent Indians. Two others, an elementary school and a high school of all Indians, are clearly innovative in character, but they are not included for lack of complete information.

Logistics: The Instructional Process

The dominant thoughts in the schools and the literature call for a reorganization of the methods of instruction. The principal recommendations are as follows:

1. Greater differentiation of staff including supervisors, head teachers, special subject teachers, teacher aides, and research specialists in testing and evaluation.

2. More planning and teaching on a collaborative basis within each discipline or field of instruction.

3. Greater flexibility in the instructional schedule providing for some variation in time and independent study of pupils, ranging

from 15 to 25 percent of pupils' time in the middle school and 20 to 40 percent in high school.

4. An open physical environment of campus design with buildings for sciences, practical arts and vocational studies, performing arts, gymnasiums, social sciences and language arts, mathematics, and other services.

5. New and imaginative use of community resources to extend learning experiences.

The Staff

There are some suggestions for improving the staff: greater professional and technical skill, more competence as community leaders, more differentiation of roles, better in-service programs for continuing education, new approaches to education of beginning teachers, more use of teacher aides, and more auxiliary service staff in some districts.

Supportive Services

As the educational program becomes more flexible and instructional roles more specialized, the supportive services will become more crucial. The nonteaching academic staff for professional functions should range from 15 to 20 percent of the number of teachers, according to the opinions of leaders and writers. The range in the districts of this study is from 13 to 16 percent of the teaching staff.

The auxiliary functions of food service, upkeep of buildings, transportation, clerical services, and others require from 44 to 63 percent of all academic staff. Some districts contract for some of these services and thus have lower percentages of employees in these categories. The total program calls for personnel ranging from 1.6 to 1.8 times the number of teachers. There is little prospect for lowering these ratios or their equivalences in contractual arrangements for services to be rendered by outside agencies.

Two propositions about future developments may modify the present structure of supportive services: (1) technological developments which may reduce attendance at school to less than five days per week for most students, with work-study programs for substantial numbers, and (2) five day per week attendance with reorganization of the school day to permit students to do all of their study at school and also for many of them to participate in work-study programs. The second proposition is most generally accepted with the possibility of expansion of supportive services in many districts.

Capital Facilities and Materials

The central trends of thought and development are for facilities that are planned in terms of the following principles: (1) utility, maximum contribution to the educational program, (2) flexibility, capability of modification for unanticipated needs, (3) aesthetics, pleasing effect on pupils, staff, and community, and (4) community centered, offering access for participation of adults.

Summer School: Extended Year

None of the 28 school districts providing data on summer schools is moving toward a year-round operation. Summer schools serve a relatively few pupils for five or six weeks. No districts report a substantial increase in demand.

There is general agreement that the regular school year might be extended gradually. Another alternative is to expand the summer school with more offerings under conditions of greater appeal to students.

There is little acceptance of the proposition that schools can be operated on quarterly periods with students attending three of the four quarters on a rotating basis, thus operating the same program on a year-round basis with less capital outlay. The proposition appears too formidable for successful management and for social adaptation.

Part-Time Programs for Adults and Dropouts

These programs vary widely in scope and scale of operation. Among the 20 districts reporting data on these programs the enrollments in full-time pupil equivalents average 3.1 percent of the regular day school enrollment in the cities, 4.7 percent in the suburbs, and 3.0 percent in the independents. These programs depend heavily on student fees for support. Most of them are inadequately staffed.

The Continuation High School

A new type of continuation high school may emerge for dropouts and borderline performers in the regular schools. These are operated by various private agencies as well as some public school districts.

Some of these schools are experimenting with new approaches to serve a special clientele in need of personal and social reorientation and adjustment.

Prospective Innovations

There has been much innovative activity in secondary education in the past two decades. In recent years Federal funds have added notable stimulation at a time of relatively favorable social and economic climate for change.

The changes have been spotty, largely experimental, and fragmentary by programs and fields of instruction such as science, mathematics, and social studies. Some districts have undertaken plans for total change for an entire school.

In this study ten elementary schools, eleven middle schools, and nine high schools have made such comprehensive changes that they are classified as highly innovative schools. They come close to representing exemplars of goals for all schools during the next decade. They will need additional resources for further development but they are examples of what many schools can do under similar conditions.

These schools have accomplished significant changes without increasing the number of staff members more than the average in their respective districts. There are three basic changes: (1) objectives — including revisions in program, instructional processes, and staff organization, (2) commitment of staff, students, and the community, and (3) the physical environment.

All of these changes were planned in conjunction with new buildings and facilities. The principal additional costs were the investments in the physical environment. Some extra costs were involved in higher salaries of selected staff members. Changes in attitudes did not appear on the cost ledger.

The experiences of these schools suggest that the costs of self-renewal may hold the greatest potential for educational dividends during the next decade.

COST ANALYSIS OF PROGRAMS

The analysis of costs on a program basis in this study leads to the following conclusions:

1. There is general agreement that methods of analysis should be developed leading to budgeting and evaluation on a program basis.

2. The new literature on planning-programming-budgeting-systems (PPBS) in recent years is as confusing as it is helpful to educators. The reason is that the systems do not contain either the conceptual bases or the technical procedures of evaluating educational outcomes. It is very doubtful that those who may be capable of designing program budgeting procedures have the knowledge to develop the corollaries for evaluating the educational inputs of various kinds and the consequent educational results.

   Education is at a stage when knowledge from a wide range of fields within education and from relevant fields outside must be harnessed in some organized manner to develop meaningful program accounting systems. Otherwise complex accounting systems may be developed which will only serve the ends of those who may wish to discredit the school system and espouse their own cause rather than to advance valid knowledge of measuring educational achievements that can be translated into costs.

3. Despite the problems inherent in program accounting systems, efforts should be focused on their development as rapidly as dependable knowledge permits.

4. In the next decade effort should be concentrated on development of an accounting system for only a few categories of programs that can be extended in detail as further knowledge is gained. The number of categories in this study is a maximum to include initially in a uniform nationwide system. Otherwise the volume of work for gathering and processing data will outrun the capacity of local districts for storing and retrieving information. Futhermore, a few categories will be more suitable for development of procedures to evaluate educational outcomes.

5. There is evidence in this study to support the proposition that school districts vary greatly in the distribution of pupil needs, particularly those needs associated with unusual learning difficulties. At the present state of knowledge, whatever the school

systems can do to serve the needs of every individual, the result will be a variable cost per pupil.

6. Program cost analysis is a promising approach to the measurement of fiscal needs of local school systems.

Cost Ratios of Programs

Unit costs represent the most important basis for analysis of expenditures on any classification of programs. In this analysis full-time equivalent pupil enrollment is the unit of cost.

Several variables enter into the average current operating expenditure per pupil in a given program. The chief ones are as follows: (1) proportion of the students' time devoted to the program, (2) the number of pupils that the teacher can work with effectively, (3) the extent of nonteaching backup staff time required to assist the teacher, (4) salary level, and (5) other expenses for instructional materials, operation and maintenance of auxiliary services.

The average expenditures per pupil for respective programs by grade level are shown in Table 1-5. These figures are the means of district averages. The figures have been adjusted to a school year of 180 days which is the most common in this sample. The average amount per pupil in each program is computed by dividing the number of pupils in the program into the total current expenditures allocated to the program.

After netting out the number of pupils and expenditures in the special programs the remainder constitutes the basic programs in grades 1-12.

The average per pupil expenditures are then converted into ratios, using the average expenditure per pupil in grades 1-12 in the basic programs as the base 1.0. These ratios are shown in Table 1-6. These ratios show wide variations in the costs of special programs that the school districts offer in their effort to meet the needs of all individuals. For example, in the cities the highest cost ratio is 2.615 for socially maladjusted pupils in grades 1-6.

After removing the special programs the average per pupil expenditure in the basic programs increases with grade level. The amount per pupil in basic programs in grades 1-6 ranges from .885 of the base in the cities to .910 in the suburbs. The average in grades 7-9 in relation to the base is 1.042 in the cities, 1.069 in the suburbs, and 1.023 in the independents. The respective ratios for grades 10-12 are 1.280, 1.109, and 1.310.

TABLE 1-5

Mean[*] Expenditure Per Pupil By Program And Grade Level
1968-69

Program (1)	Cities 12 Dists. (2)	Suburbs 8 Dists. (3)	Independents 8 Dists. (4)
1. Basic Program			
Grades 1-12	$ 714	$1,065	$ 787
1-6	632	969	709
7-9	744	1,138	805
10-12	914	1,181	1,031
2. Mentally & Physically Handicapped			
Grades 1-12	1,450	2,022	1,763
1-6	1,515	2,360	2,000
7-9	1,326	1,820	1,498
10-12	1,403	1,698	1,497
3. Socially Maladjusted			
Grades 1-12	1,752	1,851	0
1-6	1,867	2,422	0
7-9	1,820	1,326	0
10-12	1,537	1,518	0
4. Remedial & Compensatory			
Grades 1-12	1,265	1,781	1,403
1-6	1,141	1,649	1,669
7-9	1,858	1,934	1,529
10-12	1,086	1,901	1,146
5. Vocational-Technical (Ave. enrollment-0.45 FTE in Voc. Program and 0.55 FTE in Basic Program)			
Grades 7-12	1,210	1,628	1,263
7-9	1,088	0	1,610
10-12	1,198	1,628	1,275
6. Pre-Kindergarten	716	1,015	1,063
7. Kindergarten	820	1,076	850

[*] Mean expenditures adjusted to 180 day school year and 19.3% retirement payments added to all academic salary payments. This figure, 19.3%, is the average retirement payment of New York City, Elmira, and Endicott. Expenditures are based on full-time equivalent (FTE) pupils and not numbers enrolled. Pre-kindergarten and kindergarten are for full day (single session) programs.

The differences by grade level would be more pronounced if the cost per pupil in grades 1-6 were used as the base 1.0. Hence Table 1-7 shows these cost ratios to this base. For example, in the cities the average expenditure per pupil in grades 7-9 is 1.177 times the average for grades 1-6. In grades 10-12, the average expenditure per pupil in the basic programs is 1.446 times the average in grades 1-6. Other programs can be interpreted similarly.

The ratios shown here for only one year cannot be accepted as

TABLE 1-6

RATIOS OF MEAN[*] CURRENT OPERATING EXPENDITURES PER PUPIL
BY PROGRAM AND GRADE LEVEL TO MEAN
EXPENDITURE PER PUPIL IN BASIC PROGRAMS, GRADES 1-12
1968-69

Program *(1)*	*Cities* *12 Dists.* *(2)*	*Suburbs* *8 Dists.* *(3)*	*Independents* *8 Dists.* *(4)*
1. Basic Program			
Grades 1-12	1.000	1.000	1.000
1-6	.885	.910	.901
7-9	1.042	1.069	1.023
10-12	1.280	1.109	1.310
2. Mentally & Physically Handicapped			
Grades 1-12	2.031	1.899	2.240
1-6	2.122	2.216	2.541
7-9	1.857	1.709	1.903
10-12	1.965	1.594	1.902
3. Socially Maladjusted			
Grades 1-12	2.454	1.738	.000
1-6	2.615	2.274	.000
7-9	2.549	1.245	.000
10-12	2.153	1.425	.000
4. Remedial & Compensatory			
Grades 1-12	1.772	1.672	1.783
1-6	1.598	1.548	2.120
7-9	2.602	1.816	1.943
10-12	1.521	1.785	1.457
5. Vocational-Technical (Ave. enrollment-0.45 FTE in Voc. Program and 0.55 FTE in Basic Program)			
Grades 7-12	1.695	1.530	1.605
7-9	1.512	.000	2.046
10-12	1.678	1.530	1.620
6. Pre-Kindergarten	1.003	.953	1.351
7. Kindergarten	1.158	1.010	1.080

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[*] Mean ratios calculated from districts reporting respective programs. The ratios are based on estimated full-time-equivalent pupils in each program. Pre-kindergarten and kindergarten are estimated on the basis of one group of pupils each day per teacher.

fixed over a number of years. Assuming that procedures for allocation can be standardized reasonably well, the ratios could be calculated annually. Fluctuations from one year to the next would result from a number of variables which could be explained. The principal ones would be changes in salaries of staff, scale of operation as reflected partly in pupil-teacher ratio, and the extent of full development of the program with the necessary supportive services.

Observations in this study suggest that cost differentials by grade levels will become increasingly difficult to obtain in the future. Educational programs will be more flexible and grade structure will be less rigid than in the past. In this study, it is necessary to make an estimated proration of some pupils in non-graded programs according

TABLE 1-7

Ratios Of Mean*Current Operatng Expendtures Per Pupil
By Program And Grade Level To Mean
Expenditure Per Pupil In Basic Programs, Grades 1-6
1968-69

Program (1)	*Cities* *12 Dists.* *(2)*	*Suburbs* *8 Dists.* *(3)*	*Independents* *8 Dists.* *(4)*
1. Basic Program			
Grades 1-6	1.000	1.000	1.000
7-9	1.177	1.174	1.135
10-12	1.446	1.219	1.454
2. Mentally & Physically Handicapped			
Grades 1-6	2.397	2.436	2.821
7-9	2.098	1.878	2.113
10-12	2.220	1.752	2.111
3. Socially Maladjusted			
Grades 1-6	2.954	2.499	.000
7-9	2.880	1.368	.000
10-12	2.432	1.567	.000
4. Remedial & Compensatory			
Grades 1-6	1.805	1.702	2.354
7-9	2.940	1.996	2.157
10-12	1.718	1.962	1.616
5. Vocational-Technical			
Grades 7-12	1.915	1.680	1.781
6. Pre-Kindergarten	1.133	1.047	1.499
7. Kindergarten	1.298	1.110	1.199

*Mean expenditures calculated from districts reporting respective programs. Ratios are interpreted as in Table 1-6.

to grade level. Thus, the most stable ratios are the averages for grades 1-12.

The data of individual districts have been examined to ascertain if the cost ratios show a correlation with the base expenditure per pupil in grades 1-12. Are the cost ratios for each program fairly constant at all expenditure levels? An analysis of the distributions in this sample shows that the variations among districts are as wide among those on the same expenditure level (per pupil in basic programs, grades 1-12) as among those on different levels.

Component Costs

Another way of analyzing current expenditures of school districts is by proportionate amounts of the budget spent on respective programs. Strictly speaking, expenditures are not allocated on this basis. They are residually determined from decisions on the nature of programs and the character of inputs.

Administrators do not approach the process of budget making with a formal procedure of program analysis, although increasingly there is an orientation in this direction. The whole idea of PPBS accounting is to provide a method for translating information on educational outcomes to cost ledgers on a program basis. Presumably, if educational results of programs can be evaluated dependably, explicit decisions on relative allocations can be made with a greater degree of confidence than at present.

Table 1-8 shows the percentage distributions of all current expenditures by program categories in 1968-69 for the sample of districts in this study. For example, in the cities 9.7 percent of the total operating budget is spent on the four designated special programs, 4.1 percent on early childhood education, and 86.2 percent on basic programs. Averages for the other districts are interpreted in a similar manner.

The distributions of current expenditures shown in Table 1-8 can be used as a basis for estimating the need for allocations to accommodate the potential enrollments of the respective programs.

The estimated needs of school districts in this study for the four special programs shown in Table 1-8, expressed as percents of the total current operating budget, are as follows: cities—24.1 percent; suburbs—10.0 percent; independents without Indians—11.4 percent; independents with Indians—14.2 percent. These percents are computed by applying to the total estimated percents shown in Table 1-3 the per pupil expenditures of those enrolled.

TABLE 1-8

AVERAGE PERCENT OF TOTAL CURRENT EXPENDITURES OF DISTRICTS ALLOCATED TO RESPECTIVE PROGRAMS
1968-69

	Cities	*Suburbs*	*Independents*		
			All	*Indian**	*Others*
	12 *Dists.*	8 *Dists.*	8 *Dists.*	3 *Dists.*	5 *Dists.*
Total Current Expenditure	100.0%	100.0%	100.0%	100.0%	100.0%
Special Programs					
% Allocated to Mentally & Physically Handicapped	4.9	2.0	2.4	2.1	2.6
% Allocated to Socially Maladjusted	1.0	0.4	—	—	—
% Allocated to Remedial & Compensatory	2.1	2.5	3.0	2.5	3.3
% Allocated to Vocational-Technical	1.7	1.1	3.0	2.0	3.6
% Allocated to All Special Programs	9.7	6.0	8.4	6.6	9.5
Early Childhood					
% Allocated to Kindergarten	3.8	3.4	4.1	4.5	3.9
% Allocated to Pre-Kindergarten	0.3	1.3	0.3	—	0.3
% Allocated to All Early Childhood	4.1	4.7	4.4	4.5	4.2
Basic Programs					
% Allocated to All Basic Programs, Grades 1-12	86.2	89.3	87.2	88.9	86.3

*Three Independent districts with 30 to 70 percent Indian pupils.

Summer School

The summer school programs are analyzed by the same procedures as the regular day schools. The purpose is to examine the relative emphases in programs and to ascertain any trend toward significant expansion.

According to educational leaders there is no perceptible trend to indicate that the summer school soon will become an extension of the school year for a majority of pupils. A few communities are having a slow but steady increase in enrollments from year to year. In others, enrollments fluctuate and show no long-term increase.

Yet, enrollments are fairly impressive. In the summer of 1969 the percents of enrollments in grades 1-12 of the preceding regular year are as follows in the basic programs: cities—17.7 percent; suburbs—18.2 percent; and independents—21.0 percent. The percentages for the four special programs are: cities—2.0 percent; suburbs—4.8 percent; and independents—10.0 percent. Enrollments in kindergartens are less than 1.0 percent of the total enrollments in grades 1-12 of the regular year.

The mean length of the summer school session is 30 days. Students vary in the amount of work; some take two courses and others one.

The mean expenditure per pupil ranges from 2.0 to 6.0 percent of the amounts spent during the regular year. These figures indicate that the magnitude of the summer financial operation in these districts is roughly comparable to two weeks of the regular school year.

Part-Time Programs

Part-time programs for adults and dropouts represent a relatively small scale of operation. Field observers are informed that very few of the enrollees are recent dropouts. Most of them are adults. In some cases districts have difficulty classifying work as vocational in nature. Much of it is crafts and practical arts. In the cities a substantial portion is academic work in fields like language arts and social sciences. There is very little vocational education in these programs. In most instances vocational education is being taken in junior colleges.

While these part-time programs constitute an enrollment population of only 3 to 5 percent of the regular day school year in full-time equivalents, they perform a unique service to their clientele. The continuation high school for dropouts is among the most unique ones observed in this study. The average expenditure from tax revenues for these programs amounts to 1.2 percent of the current operating budgets of the school districts participating in this study.

PROJECTIONS OF NEEDS TO 1980

The educational needs in 28 of the school districts of this study have been translated into minimum additional costs of the base year 1968-69. The estimates for the nation in 1980 are based on average national expenditures in 1968-69.

Estimates are based on minimal current needs with a ten-year time lag for development. These are realistic goals to set for the next decade. The amounts are expressed as percents of the national current operating expenditure of $29,039,741,000 for public elementary and secondary schools in 1968-69. In other words the estimates are the absolute increases needed in 1968-69 to operate the proposed improvements. Hence, if we assume that a decade is an appropriate time for development, these percentages are relative increases indexed to the base year 1968-69. If there were no other increases due to inflation, absolute rise in standard of living, transfer of pupils from nonpublic to public schools, decline in number of drop-outs, extension of the school year or summer school and adult continuing education, and additional expenditures to eliminate backlogs in capital deficiencies, these estimates would represent the percentage increase of national current expenditures over 1968-69 by the year 1980.

The estimates are as follows:

	Estimated Increase in Percent of National Current Expenditures
1. PARENT EDUCATION	
(1) For children under 3 years ot age — Parents of 3,000,000 children — $270 M. (Between 1/4 and 1/3 of all parents with children under 3 years.)	0.93
(2) For children 3-4 years of age—Estimates are included as built-in components in the three alternative programs.	
2. DAY CARE CENTERS	
Target population: 4.49 percent of estimated population under 6 years of age in 1980 = 1,362,000	
(1) Public school programs 681,000 pupils at $900 = $612.9 M.	2.11
(2) Public school assistance to private centers 681,000 pupils at $900 = $61.3 M.	0.21
3. NURSERY SCHOOL: 3-4 YEAR-OLDS	
(1) Low demand 2,866,000 pupils at $900 = $2.579 B. less present expenditure of $0.145 B. = $2.434 B. increase	8.38
(2) Medium demand 4,699,000 pupils at $900 = $4.229 B. less $0.145 B. = $4.084 B. increase	14.06
(3) High demand 6,034,000 pupils at $900 = $5.431 B. less $0.145 B. = $5.286 B. increase	18.20

4. KINDERGARTEN

(1) To change present programs from double session to single session day = $1.1035 B. 3.80

(2) To enroll 950,000 5-year-olds not in kindergarten in 1968-69 at $900 = $855 M. 2.94

(3) To enroll all 5-year-old population increase from 1968-69 to 1980: 1,867,000 at $900 = $1.680 B. 5.79

5. PROGRAMS FOR MENTALLY AND PHYSICALLY HANDICAPPED PUPILS

Estimates of increased cost are based on 100 percent increase in enrollments to meet full needs.

(1) Cities 2.50%

(2) Suburbs 2.00%

(3) Independents 2.40%

(4) Average for the Nation = $669 M. 2.30

6. PROGRAMS FOR SOCIALLY AND EMOTIONALLY MALADJUSTED PUPILS

Estimates of increase for the Nation based on twice the percent of the budgets spent in the Cities = $581 M. 2.00

7. REMEDIAL AND COMPENSATORY PROGRAMS

Percentage increases in present enrollments used as the basis for average national increase. Cities, 300%; Suburbs, 15%; Independents, 85%.
Total increase = $1.426 B. 4.91

8. VOCATIONAL-TECHNICAL PROGRAMS

Budget increase during the 1970's is based on an estimated enrollment increase of three times the number in 1968-69 = $1.742 B. 6.00

9. CORRECTION OF IMBALANCE FOR STATES BELOW THE NATIONAL AVERAGE EXPENDITURE PER PUPIL

Estimated increase to raise 31 states below the national mean of $702 pupil in ADA to this figure = $2.658 B. 9.00

10. TRANSFER OF SOME EDUCATIONAL SUPPORT FROM NONPUBLIC TO PUBLIC SCHOOLS

No estimate

11. BASIC PROGRAMS = $2.904 B 10.00

12. COUNTERACTION OF PROFESSIONAL OBSOLESCENCE

Estimated cost = $1.162 B. 4.00

13. TEACHER EDUCATION, RESEARCH AND DEVELOPMENT IN UNIVERSITIES

No estimate

14. CAPITAL OUTLAY

Annual costs for replacements, excluding interest charges. Annual cost = $4.763 B. 16.40

TOTALS:	*Excluding Capital Outlay*	*Including Capital Outlay*
(1) Low demand enrollments for ages 3 and 4	62.37%	78.57%
(2) Medium demand enrollments for ages 3 and 4	68.05	84.47
(3) High demand enrollments for ages 3 and 4	72.19	88.59

The totals of these estimates range from 62.37 percent to 72.19 percent of the total current operating expenses in 1968-69. This range is based on three propositions for development of early childhood programs for children of ages three and four. There are other factors, as mentioned, which are not estimated.

A growth rate in the nation's economy of 3 percent each year over the preceding year for inflation and rise in standard of living would be expected to require a comparable increase in the expenditures for education. Such a growth rate would increase educational expenditures of 1968-69 by at least 40 percent in 1980. Moreover, such a growth would be expected to apply to the relative percentage estimates of this study since they are based on prices in 1968-69.

Thus, the overall minimum current operating expenditures for the public schools, assuming no transfer of pupils from the nonpublic schools, would be about 2.27 times the amount in 1968-69, or an increase of 127 percent.

A general estimate for capital outlay expense is presented to emphasize the relative magnitude of this important component of educational costs. Too often capital costs are treated separately from operating costs, with the result that the symbiotic relationship between the two is seldom put into proper perspective.

Among the most innovative schools in this study, cost data are available on 12 plants that were constructed within the last five years. These plants were designed for programs that exemplify realistic goals for 1980. The average initial cost for buildings, grounds, and basic equipment was $4,000 per pupil at 1968-69 prices. At an estimated overall depreciation rate of 35 years, the annual cost is $140 per pupil. This amounts to 16.4 percent of the average expenditure per pupil for current expenses in 1968-69.

This percentage figure may be close to the average cost of replacement of capital facilities, excluding interest payments on capital bonded debt. In 1968-69 the nation spent $4.461 billion on capital outlay, much of which was for 1960 rather than 1980 schools. This is 15.4 percent of current expenditures in that year. In addition $1.104 billion was spent on interest payments on capital bonded debt. This amounts to 3.8 percent of the current expenditure. Thus, at 1968-69 prices and interest rates an amount equal to about 20 percent of current expenditures is the approximate size of costs for capital replacements and debt service.

This rate of annual expenditure will not eliminate the large backlogs of antiquated facilities which are the single greatest impediment to educational change in this country. It is safe to say that at least twice this rate of expenditure (or 40 percent) is needed for ten years to bring the capital facilities of the public school system up to reasonable utility for the programs that will be needed in 1980.

NEEDS EXTERNAL TO THE PUBLIC SCHOOL SYSTEM

Everywhere there is great concern for more employment opportunities for graduates, and for those who may continue formal schooling beyond high school.

Leaders in the great cities want enough business and industry to employ the high potential of semiskilled and skilled workers. In the suburbs there is similar concern for a small proportion of the school population. The nonmetropolitan communities have a need which appears to be somewhere between the suburbs and the great cities.

A very special need is found on the Indian reservations and isolated communities bordering on them. These latter communities have served as doors to an integrated society, though offering far too few employment opportunities for Indian citizens.

All educational leaders place great emphasis on the need of employment opportunities for work-study programs for youth in school, for programs to retrain adults who become dislocated because of technological changes, and for high school graduates. Obviously schools and employment opportunities are not matched. Thus, the school has to help many of its students to build vicarious acquaintance with the world of work through guidance and counseling, and to acquire skills which ultimately give them mobility for employment elsewhere.

There is great concern among members of school systems about relationships between the schools and other institutions. None has a higher priority than the home, with unlimited potential for involvement of parents as educational participants.

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CHAPTER 2

*Resource Configurations and Costs In Educational Programs For Exceptional Children**

RICHARD A. ROSSMILLER

Perhaps no other concept so pervades the history of American education as does the concept of equality of educational opportunity. The founding fathers were emphatic in their expression of the need for a universal system of free public schools open to all, and the writings of each of our early presidents revealed recognition of the importance of universal public education as a foundation of American democracy. That equality of educational opportunity is considered no less important today, and that it has not yet been achieved, is evidenced by President Nixon's message of March 3, 1970, in which he proposed creation of a National Institute for Education and stated, "The purpose of the National Institute of Education would be to begin the serious, systematic search for new knowledge needed to make educational opportunity truly equal."[1]

The history of American education reflects a continual struggle to achieve greater equality of educational opportunity.[2] The attainment of equality of educational opportunity for all Americans, however, has been nearly as elusive as the pot of gold at the end of the rainbow. Although progress indisputably has been made, the end of the rainbow continues to recede as we move toward it.

Exceptional children were for many years widely regarded as not being subject to application of the concept of equal educational opportunity. They often were either discouraged from attending the public schools or excluded from them, and responsibility for the exceptional child's education was assumed to rest with the family—or perhaps was consigned to charity. As the concept of equality of educational opportunity increasingly came to be viewed as requiring that every child should be educated to the limit of his ability, simultaneously there developed a recognition that the public school system should accept responsibility for providing educational programs for exceptional children. Thus, there have developed, during the present century, educational programs for children who previously were considered uneducable.

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* This chapter summarizes the research reported in Richard A. Rossmiller, James A. Hale, and Lloyd E. Frohreich, *Educational Programs for Exceptional Children: Resource Configurations and Costs.* (Madison, Wis.: Department of Educational Administration, University of Wisconsin, 1970).

THE EXCEPTIONAL CHILD

The term "exceptional child" needs clarification, for it has been applied in varying contexts and has been used in reference to such a diverse array of children that it does not convey a precise meaning. For the purpose of this research, Kirk's definition of the exceptional child was employed:

> The exceptional child is . . . that child who deviates from the average or normal child in mental, physical, or social characteristics to such an extent that he requires a modification of school practices, or special educational services, in order to develop to his maximum capacity.[3]

This basic definition was further restricted by excluding the child who deviates from the average child solely or primarily because of environmentally-related disadvantages. Thus, the so-called "compensatory" educational programs for socially, economically, and or culturally disadvantaged children did not fall within the scope of this study.

A review of the literature in the field of special education revealed general agreement concerning the categories (or taxonomy) within which programs for educating exceptional children may be placed.[4] The categories identified by most authorities include: (1) intellectually gifted; (2) intellectually handicapped—sometimes further subdivided into slow learner, educable mentally retarded; (3) auditorily handicapped; (4) visually handicapped; (5) handicaps arising from neurological disorders; (6) handicaps related to physical disabilities; (7) speech handicaps; (8) handicaps associated with deviant behavior; and (9) handicaps arising from learning disorders. In addition, many writers suggest that a tenth category, multiple handicaps, should be included in a taxonomy of exceptional children.

The development of educational programs for exceptional children has been characterized by evolution and expansion. For example, programs for the deaf and hard of hearing, and for the blind and partially sighted have been in existence for many years. The early programs, however, were developed primarily in private schools (concentrated largely in the eastern portion of the United States) and in state institutions for the deaf and/or the blind. The development of educational programs for intellectually handicapped children followed a somewhat similar pattern. It is only during the present century, and especially during the past 40 years, that a substantial number of public school systems have attempted to provide educational programs for exceptional children on a broad basis. In fact, it could be argued that only in recent years has the concept of equality of educational opportunity been defined operationally to include the exceptional child.

Concurrent with the realization that exceptional children are entitled to education to the limit of their potential has been the development of programs to serve additional categories of the handicapped. Among the educational programs for exceptional children developed in recent years are those for emotionally disturbed children, children with learning disorders, and children with multiple handicaps. Expansion of educational programs for exceptional children has been accompanied by growing concern for the financing of such programs, especially since they tend to be more expensive than programs for normal children. To date, however, relatively little is known concerning either the relative cost of educating an exceptional child in comparison with the cost of educating a normal child or the program components which contribute to cost differentials.

OBJECTIVES

This research was undertaken in an attempt to help fill the existing information gap regarding the relative cost of programs for various categories of exceptional children and the resource inputs which contribute most importantly to the cost of such programs. The research was designed to answer the following questions:

1. What criteria are employed in identifying the various categories of exceptional children and what is the estimated incidence of each category of exceptionality in the total population of school age children?

2. What is the nature of programs for exceptional children which are reputed to be of high quality, particularly with regard to the configuration of human and material resources being applied to such programs?

3. What cost differentials are associated with educational programs for the various categories of exceptional children relative to the costs of the regular school program provided for normal children?

DESIGN OF THE STUDY

Conceptually, the research reported herein may most appropriately be regarded as a series of case studies. It became apparent very early in the study that no agreement existed in the literature concerning the nature of exemplary educational programs for exceptional children. Yet, it seemed clear that any attempt to forecast the demand for educational programs for exceptional children in 1980 should be based on what is thought to be the best current practices in this field. Consequently, the first major design task was to develop a procedure that would yield a sample of school districts which were regarded by persons knowledgeable in the field of exceptional child education as providing exemplary (i.e., high quality) programs for exceptional children. A second major design task was that of developing instruments and procedures which would yield accurate and reliable data concerning both the costs associated with educational programs for each of the various categories of exceptionality and the configuration of resources being applied in each program.

Selection of the Sample

A two-step procedure was employed in obtaining a sample of school districts in which data for the study would be gathered. First, it was necessary to identify a representative sample of states which were regarded by authorities in special education as being leaders in the provision of educational programs for exceptional children. Second, it was necessary to identify within each of these states a sample of school districts (or other educational agencies) which would be broadly representative of districts within the state which provided high-quality, comprehensive educational programs for exceptional children.

To identify the sample of states, personnel in the U.S. Office of Education's Bureau of Education for the Handicapped, members of the staff of the Council for Exceptional Children, and colleagues in the

Department of Behavioral Disabilities at the University of Wisconsin were asked to identify persons they believed to have a broad knowledge of the educational programs for exceptional children which are found across the United States. From the 18 persons suggested, the list was reduced to a panel of nine persons who were chosen to secure adequate geographic representation and to secure representation from various professional affiliations (e.g., state department of education personnel, university professors, and program administrators at the school level). Each of the nine panel members was then contacted by letter, requested to serve on the panel, and asked to identify "the five states that, on the basis of your knowledge and judgment, are doing the most outstanding job of providing high quality educational programs for exceptional children." Six of the nine persons who were requested to serve on the panel agreed to participate and provided us with the information requested.[5]

In selecting the five states in which the study would be conducted, the primary criterion was the number of nominations each state received from the members of the panel. However, it was deemed important that, insofar as possible, the sample should be structured to include states which reflected varying social, economic, and demographic conditions as well as being dispersed geographically. Table 2-1 contains a listing of the states nominated by one or more members of the panel and a summary of the data with regard to selected characteristics of each state.

After exploring several combinations of states chosen from among the 13 states which were identified by one or more members of the panel, a tentative sample consisting of California, Florida, New York, Texas, and Wisconsin was selected. Each state included in the sample was nominated by at least two of the six panel members and the five states are geographically dispersed. All are quite heavily populated (ranking between 1 and 16) with correspondingly large school enrollments. They vary considerably, however, in population per square mile (from 42 persons to 378 persons), in percent of population that is urban (from 64 percent to 86 percent), and in per capita personal income (from $2,744 to $3,759). After selection of the tentative sample, the chief state school officer or his designated representative and the head of the state school agency's bureau or department of special education were contacted and their agreement to participate in the project was requested. The state education agency in each of the five states agreed to participate in the study.

Personnel in the five state departments of education assisted in

TABLE 2-1

DATA EMPLOYED IN SELECTING THE SAMPLE OF STATES

(Rank of state in parentheses)

State	*Nominations as Exemplary*	*Type of State Support for Special Education*[a]	*Estimated Total Population, 7-1-68*[b] *(in Thousands)*	*Estimated Population Age 5-17, 7-1-68*[b] *(in Thousands)*	*Population per Square Mile, 1968*[b]	*Percent of Population That is Urban, 12-31-67*[b]	*Number of Basic Operating Administrative Units, 1967-68*[c]	*Public School Enrollment, Fall, 1968*[b] *(in Thousands)*	*Per Capita Personal Income, 1967*[b]	*Years of School Completed by Population Age 25 and Older, 1960*[b]	*State and Local Revenues as a Per Cent of Total Income, 1967-68*[d]	*Geographic Region*
California	6	Cat.	(1) 19,221	(1) 4,930	(13) 123	(2) 86.0	(46) 1,101	(1) 4,570	(6) 3,665	(2) 12.1	(23) 4.7	Pac. Coast
Wisconsin	5	Cat.	(16) 4,213	(16) 1,175	(24) 77	(27) 64.2	(36) 487	(16) 955	(18) 3,156	(31) 10.4	(23) 4.7	Mid-West
Illinois	4	Cat.	(4) 10,974	(6) 2,800	(10) 196	(6) 81.4	(49) 1,310	(6) 2,245	(3) 3,750	(30) 10.5	(43) 3.9	Mid-West
Florida	3	Comb.	(9) 6,160	(9) 1,550	(16) 114	(12) 74.0	(10) 67	(9) 1,355	(28) 2,853	(21) 10.9	(30) 4.5	South
Iowa	2	Cat.	(25) 2,748	(26) 739	(29) 49	(36) 55.5	(35) 445	(24) 657	(21) 3,109	(14) 11.3	(23) 4.7	Mid-West
Michigan	2	Comb.	(7) 8,740	(7) 2,454	(11) 153	(13) 73.3	(42) 708	(7) 2,124	(12) 3,396	(25) 10.8	(12) 5.1	Mid West
New York	2	Uncl.	(2) 18,113	(2) 4,368	(6) 378	(4) 83.8	(43) 761	(2) 3,411	(2) 3,759	(28) 10.7	(12) 5.1	East

State	*Nominations as Exemplary*	*Type of State Support for Special Education*[a]	*Estimated Total Population, 7-1-68*[b] *(in Thousands)*	*Estimated Population Age 5-17, 7-1-68*[b] *(in Thousands)*	*Population per Square Mile, 1968*[b]	*Percent of Population That is Urban, 12-31-67*[b]	*Number of Basic Operating Administrative Units, 1967-68*[c]	*Public School Enrollment, Fall, 1968*[b] *(in Thousands)*	*Per Capita Personal Income, 1967*[b]	*Years of School Completed by Population Age 25 and Older, 1960*[b]	*State and Local Revenues as a Per Cent of Total Income, 1967-68*[d]	*Geographic Region*
Ohio	2	Comb.	(6) 10,591	(5) 2,834	(9) 259	(14) 73.2	(41) 691	(4) 2,389	(15) 3,213	(21) 10.9	(38) 4.2	Mid-West
Texas	2	Gen.	(5) 10,972	(4) 2,882	(33) 42	(8) 77.4	(48) 1,260	(3) 2,613	(32) 2,744	(31) 10.4	(34) 4.3	South West
Colorado	1	Cat.	(30) 2,048	(30) 554	(39) 20	(11) 75.3	(22) 181	(29) 524	(19) 3,135	(2) 12.1	(2) 5.1	Mountain
Connecticut	1	Comb.	(24) 2,959	(24) 748	(4) 604	(9) 76.9	(21) 178	(26) 629	(1) 3,96[illegible]	(19) 11.0	(30) 4.5	East
Louisiana	1	Comb.	(19) 3,732	(17) 1,085	(20) 83	(24) 64.5	(9) 66	(20) 864	(42) 2,456	(46) 8.8	(7) 5.5	South
Minnesota	1	Cat.	(20) 3,646	(18) 1,030	(31) 46	(26) 64.3	(45) 1,095	(17) 890	(20) 3,116	(25) 10.8	(9) 5.3	Mid-West

[a] Based on state support program description in Thomas L. Johns (ed.) *Public School Finance Program, 1968-69*. Washington, D.C.: GPO, 1969.

[b] Research Division, National Education Association, *Rankings of the States, 1968*, Washington, D.C.: NEA, 1969.

[c] Research Division, National Education Association, *Rankings of the States, 1968*. Washington, D.C.: NEA, 1968.

[d] Committee on Educational Finance, National Education Association, *Financial Status of the Public Schools, 1969*. Washington, D.C.: NEA, 1969.

identifying the sample of school districts to be studied in their state. The project director met with the head of the state education department's division of special education and with any other staff member the department head wished to involve, outlined the objectives and design of the project; and requested the department head and his staff to recommend six to ten school districts (or intermediate agencies) in the state that would be representative of school districts providing what, in their judgment, were high quality, comprehensive educational programs for exceptional children.

From the list of school districts suggested by the state department of education's special education staff, a sample consisting of five or six school districts or intermediate agencies was selected for each of the five states. In selecting each sample, an attempt was made to include districts of varying size and varying social, economic, and demographic characteristics. The school districts selected for the sample in each state were:

California

1. El Rancho Unified School District, Pico Riviera
2. Mt. Diablo Unified School District, Concord
3. San Diego Unified School District, San Diego
4. San Juan Unified School District, Carmichael
5. Santa Cruz County Schools, Santa Cruz

Florida

1. Alachua County Schools, Gainesville
2. Dade County Schools, Miami
3. Duval County Schools, Jacksonville
4. Highlands County Schools, Sebring
5. Hillsborough County Schools, Tampa
6. Lee County Schools, Fort Myers

New York

1. Binghamton City School District, Binghamton
2. Board of Cooperative Educational Services No. 1, Erie County.
3. Board of Cooperative Educational Services No. 2, Westchester County
4. Rochester City School District, Rochester
5. Schenectady City School District, Schenectady

Texas

1. El Paso Independent School District, El Paso
2. Galena Park Independent School District, Galena Park
3. Lubbock Independent School District, Lubbock
4. North East Independent School District, San Antonio
5. Plano Independent School District, Plano

Wisconsin

1. Jt. School District No. 10, Appleton
2. Jt. School District No. 1, Green Bay
3. Jt. School District No. 8, Madison
4. Milwaukee City School District, Milwaukee
5. Jt. School District No. 1, Oshkosh
6. Jt. School District No. 1, West Bend

The superintendent of each school district included in the sample was contacted by letter and requested to commit his school district to participation in the study. In the letter the objectives and design of the research were outlined; the criteria and procedure employed in selecting school districts for inclusion in the sample were described; and the data which would be sought and the procedures which would be followed in collecting the data were summarized. Of the 27 school districts contacted, only one (San Diego, California) declined to participate in the study. However, during the course of the study it became apparent that, within the time constraints, the Highlands County and Hillsborough County, Florida, school systems would not be able to provide the necessary data concerning expenditures for and personnel employed in their exceptional child programs; so they also were dropped from the sample.

In the case of Rochester, New York, the school district had undertaken a thorough analysis of the cost of its special programs in 1967-68 in conjunction with a New York State Education Department study and was reluctant to undertake the task of providing similar data for 1968-69. However, the data available for 1967-68 were sufficiently comprehensive that they could be used to establish cost ratios for each program. Furthermore, no material changes had been made in the programs themselves. Consequently, cost ratios for the Rochester, New York program were based on fiscal data for the 1967-68 school year rather than for the 1968-69 school year.

Data Collection

Several considerations basic to the objectives of the study were of paramount importance in approaching the tasks of data collection. First, it was necessary to gather data concerning a specific educational program for a given category of exceptionality. Data concerning the total expenditures for and number of personnel involved in special education programs as a whole would not suffice; it was essential to obtain such data on a program-by-program basis. Second, it was important that programs and program elements be defined with sufficient clarity so that the data obtained from each district would be comparable. Third, it was necessary that programs for each exceptionality be described in terms of the configuration of resources being applied, preferably on the basis of direct observation by members of the research team, in order properly to interpret any cost differentials which might be identified. Finally, the research team's knowledge of the "real world" suggested that few, if any, school districts in the United States maintain either financial or personnel records on a program basis—despite all the admonitions and testimonials regarding the wonders of planning-programming-budgeting systems which appear in the educational literature. Thus, it was apparent from the outset that the data collection process was likely to be tedious and time-consuming.

The difficulties experienced by previous researchers who attempted to secure comparable data regarding expenditures for special educational programs from the accounting records maintained by school districts were legion. Consequently, it was decided at the outset to develop data forms which would delineate clearly the programs and elements with which this project was concerned and to require that the data be cast in this format. This approach required, of course, that the participating school districts provide the data in the project's format, not their own. This, in turn, meant that the districts' records regarding their programs for exceptional children would need to be searched, and in some cases reconstructed, in order to provide the data that were needed. Recognizing the amount of work entailed in providing the data, arrangements were made to reimburse either the school district or the person designated by the district to perform the task as an additional assignment for the time required to secure the needed data.

It was necessary to establish a tentative *a priori* categorization of program elements before data collection forms could be designed. On the basis of knowledge of school programs generally, and special education programs specifically, it was decided that information should be acquired concerning the broad categories of pupils, professional personnel, and supplies and equipment. This decision provided a rationale for the nature of the data forms which would be required. Within each of these three broad areas, additional program elements were identified and provided for in various data forms.

In addition to securing data regarding educational programs for the various categories of exceptional children, it also was necessary to secure data regarding the costs associated with programs for normal children if cost ratios were to be computed. To supply the data required to accomplish the objectives of the project, six data forms and an interview/observation protocol were developed, field tested, and modified before data collection was initiated. Except for Rochester, New York, where fiscal data for the 1967-68 school year were used, all data obtained were for the most recently completed full school year, 1968-69. The categories of exceptionality were identified and defined so as to be compatible with those employed by the U.S. Office of Education in its recent data collection projects.

Visits to the State Department of Education in each of the sample states were completed during September and October, 1969. Selection of the sample of school districts in each state was completed by December 1, 1969. Visits to each of the school districts included in the final sample were scheduled as follows: Wisconsin—October and November, 1969; New York—October and November, 1969; Texas—December, 1969; California—January and February, 1970; Florida—January and February 1970. One or more members of the research staff visited each school system included in the sample, discussed with the person(s) who would be completing the data forms the information needed and answered questions concerning them, interviewed the person(s) responsible for administration of the special education program(s), and visited at least one typical classroom for each category of exceptional child program operated by the sample district.

Analysis of the Data

The fact that this study involved careful and intensive case studies of programs for exceptional children in 24 school systems necessitated that the analysis of the data consist essentially of descriptions of the programs—both narrative and statistical. The nature of the sample precluded the application of any type of inferential statistical treatment. Descriptive statistical analyses were performed, however, and such items of information as mean and median expenditures for various program elements were reported. The major task involved in analysis of the data was reduction of the data in terms of programs and program elements. Computation of the per pupil cost of regular programs provided base line data. The costs associated with each special program were then computed and compared with the cost of the regular program to obtain cost differentials for each program in each district.

An essential step in the data reduction process was to select certain expenditure components which would best reflect the inputs necessary to support regular educational programs and educational programs for exceptional children. The expenditure components which were selected as being representative of both types of programs, as well as satisfying the necessary criterion of being amenable to comparison, were: (1) administration, (2) teachers, (3) teacher aides, (4) clerical and secretarial, (5) guidance and counseling, (6) health services, (7) food services, (8) transportation, (9) other supportive services, (10) fringe benefits, (11) instructional supplies and equipment, (12) operation and maintenace, (13) other costs of current operation, (14) debt service, and (15) capital outlay.

To provide concise descriptions of the sources of cost differentials in educational programs for exceptional children, the expenditure components discussed above were grouped in accordance with the Expenditure Index suggested by Buchmiller[7] based on his principal components analysis of line-item expenditures reported by 371 Wisconsin K-12 school districts for the 1967-68 school year. Buchmiller's recommended broad expenditure categories were Management, Instruction, Instructional Support, Institutional Operation, Acquisition of Facilities, and Equipment and Services.

COSTS ASSOCIATED WITH EDUCATIONAL PROGRAMS FOR EXCEPTIONAL CHILDREN

It should be emphasized that the school districts which comprise the sample for this study were not randomly chosen. Rather, they were chosen on the basis of their reputation for providing high quality educational programs for exceptional children. No claim can be made that the sample was representative of all school districts, for obviously it was not. Likewise, no claim is made that the observed programs represented average current practice in educational programs for exceptional children. To the contrary, the school systems were indeed providing high quality programs for exceptional children. Several programs were of the type that any district desiring to provide a high quality program for exceptional children should seek to emulate. Thus, the data afford a defensible basis for fiscal and program planning to meet the educational needs of exceptional children in 1980.

In addition to the limitations imposed by the sampling procedure, it must be recognized that data regarding the configuration of resources being applied in special educational programs for exceptional children are very difficult to obtain. The school districts which comprised the sample did not maintain fiscal, personnel, and pupil records on a programmatic basis. It often was necessary virtually to reconstruct existing school district records in order to obtain these data on a program-by-program basis. Obviously, arbitrary decisions were necessary in this process. Nevertheless, the essential integrity of the data was maintained and the program costs and cost indices approximate very closely the true cost of providing high quality educational programs for exceptional children.

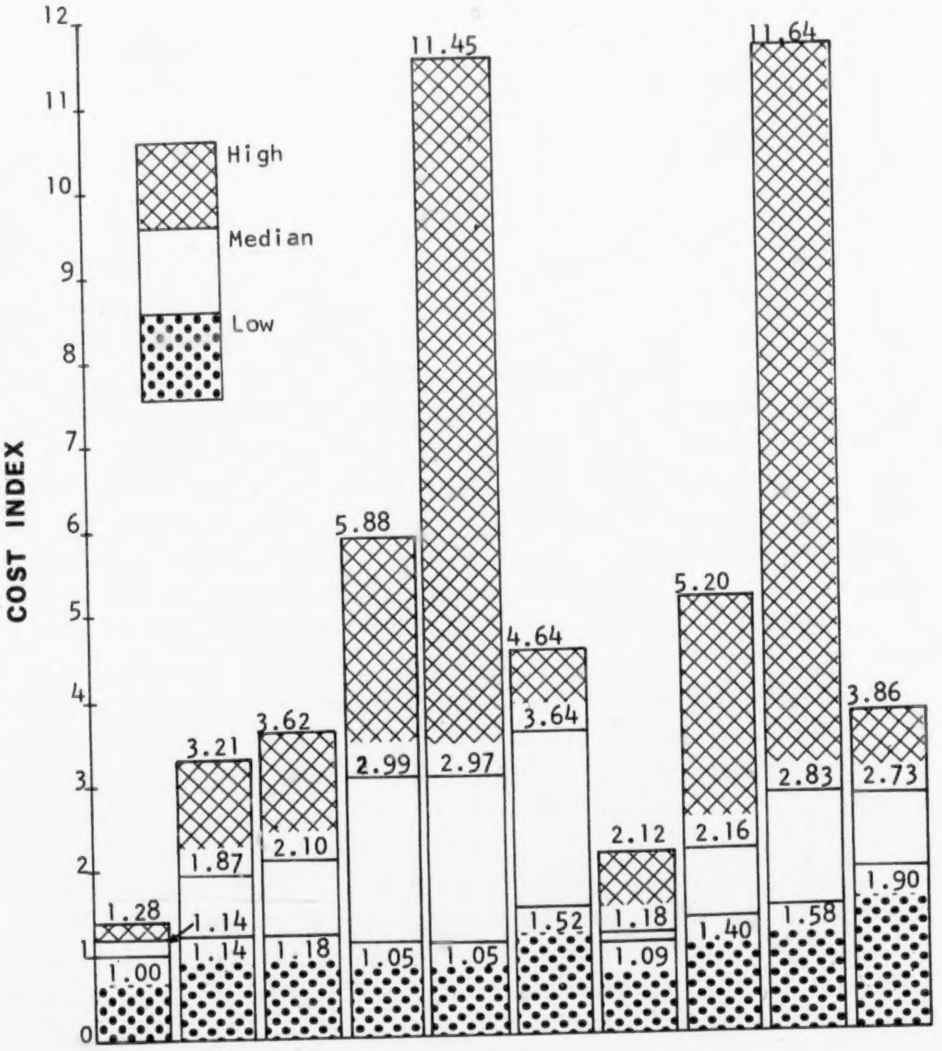
Figure 2-1 illustrates the low, median, and high cost indices identified for each of ten categories of educational programs for exceptional children. The cost index represents the relationship between the expenditure per pupil in a school district's regular educational program and the expenditure per pupil in each of its special educational programs. For example, a cost index of 2.0 indicates that a district is spending twice as much per pupil in a special program as it spends per pupil in its regular program. Unlike a per-pupil expenditure, which tends to be both time-bound and place-bound, a cost index has the advantage of permitting gross comparisons to be made among and between districts, and within a district over time.

In no instance did the district which had the lowest cost index for a given special program category spend more than twice as much per pupil in that category as it spent per pupil in its regular program. The cost index for the lowest district in each program category varied from a low of 1.0 (intellectually gifted) to a high of 1.90 (multiple handicapped). Thus, the school district which had the lowest cost index for programs for intellectually gifted pupils was spending the same amount per pupil in this program as it was spending per pupil in its regular program. However, in the case of both programs for the intellectually gifted and programs for the multiple handicapped, the sample included only a few districts which provided such programs.

The research team does not recommend that either fiscal or program planning be based on the lowest cost indices reported for each

FIGURE 2-1

COST INDICES BY PROGRAM FOR SCHOOL DISTRICTS HAVING THE HIGHEST, MEDIAN, AND LOWEST COST INDEX FOR EACH CATEGORY OF EXCEPTIONAL PROGRAM



presented, and specific case reports are provided. Psychosomatic disorders are examined in the areas of diagnostic assessment, case evaluations, and individual cases. The role of the nursery school is explored in terms of the following relationships: with those children who are in preparation of or undergoing direct treatment, and in relation to the total child (analytic program). An appendix includes statistical information regarding these subjects. (RD)

ED 036 007 EC 004 845

Johns, Roe L., Ed   And Others

Dimensions of Educational Need.

National Educational Finance Project, Gainsville, Fla.

Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.

Pub Date 69

Note—250p.

EDRS Price MF-$1.00 HC-$12.60

Descriptors—Adult Education, Community Colleges, Compensatory Education, Disadvantaged Youth, Early Childhood Education, *Educational Finance, *Educational Needs, *Educational Programs, Elementary Education, Exceptional Child Education, Extended School Year, Handicapped Children, Junior Colleges, Secondary Education, Vocational Education

Roe L. Johns and J. Alan Thomas survey the problem of educational need, and Kern Alexander considers the implications of the dimensions of educational need for school financing. Dimensions of need in the following areas are defined: early childhood and basic elementary and secondary education, by William P. McLure; educational programs for exceptional children, by Richard A. Rossmiller, and for the culturally deprived, by Arvid J. Burke; vocational education, by Erick L. Lindman and Edwin L. Korth; community junior college education, by James L. Wattenbarger; and adult and continuing education, by J. Alan Thomas and William S. Griffith. In addition, Roe L. Johns discusses the extended school year. An abstract of the research design for the National Educational Finance Project is appended. (JD)

ED 036 008 EC 004 846

Kentucky's Public Schools: Status Report; Program for Exceptional Children.

Kentucky State Dept. of Education, Frankfort. Div. of Special Education.

Pub Date Aug 69

Note—61p.

EDRS Price MF-$0.50 HC-$3.15

Descriptors—Aurally Handicapped, Educable Mentally Handicapped, *Educational Needs, Emotionally Disturbed, *Exceptional Child Research, Foundation Programs, *Handicapped Children, Learning Disabilities, Mentally Handicapped, Physically Handicapped, *Special Classes, Speech Handicapped, *Speech Therapy, State Aid, State Legislation, Teacher Salaries, Trainable Mentally Handicapped, Visually Handicapped

Identifiers—Kentucky

Under Kentucky's Foundation Program Law of 1954 as amended, which provides for classroom units for exceptional children, the number of such units has increased from 99.5 to 29 districts in the Program's first year to 3,060 in 148 of the state's 193 districts in 1969-70. Units for the mentally retarded increased most, from 22.5 to 732.3, in 130 districts. In 1969-70, 66 districts provided the services of a speech correctionist; however, only one county served all seven categories of handicaps. Thus 24.1% of the total need, excluding that of speech therapy, was being met. Of 27,437 speech handicapped children, only 9,165 were served, resulting in a need for 152.4 additional units. Needs in all areas exceeded the number of qualified personnel; local school districts were found hard pressed in providing facilities, equipment, and supplies. Provisions of the Special Education Act of 1948 as amended for reimbursement of excess cost of teachers' salaries are detailed. (JD)

ED 036 009 EC 004 847

Proceedings of the State Conference for Teachers of Exceptional Children (Sheraton Hotal, Louisville, Kentucky, October 25-26, 1968).

Spons Agency—Kentucky State Dept. of Education, Frankfort. Div. of Special Education.

Pub Date 68

Note—107p.

EDRS Price MF-$0.50 HC-$5.45

Descriptors—Administration, Aurally Handicapped, Educable Mentally Handicapped, *Exceptional Child Education, *Family Involvement, Gifted, *Handicapped Children, Mentally Handicapped, Neurologically Handicapped, *Parent Attitudes, Physically Handicapped, Speech Handicapped, *Student Evaluation, Trainable Mentally Handicapped, Visually Handicapped

The proceedings include addresses by Bernard Weisskopf on the parents of the handicapped child, by William J. Tisdall on student evaluation in special education, and by Merle B. Karnes on the involvement of the total family in the education of the handicapped. Group reports are provided on the crippled, neurologically impaired, visually handicapped, speech and hearing impaired, and gifted. Further reports treat administration, the trainable mentally handicapped, and the educable mentally handicapped at primary, intermediate, and junior and senior high school levels. (JD)

ED 036 010 EC 004 848

Guidelines for Program Development, Special Education, Volume III.

Texas Education Agency, Austin.

Report No—Bull 673

Pub Date 68

Note—174p.

EDRS Price MF-$0.75 HC-$8.80

Descriptors—Behavior Patterns, Creative Activities, *Curriculum, Educational Methods, *Exceptional Child Education, Individual Development, Language Arts, Language Development, *Learning Disabilities, Mathematics, Minimally Brain Injured, Motor Development, Parent Teacher Conferences, Perceptual Development, Program Administration, Sciences, Social Studies, *State Programs, Student Evaluation, Vocational Education

Identifiers—Texas

The Texas public school program for the minimally brain injured is outlined; guidelines are provided for screening, identifying, and evaluating the brain injured. The development of interpersonal relationships is described, with suggestions given for establishing behavioral controls and for conducting parent conferences and counseling; the structuring of the classroom is explained. Over one half of the document details the curriculum for the following developmental areas, including motor, perception, language, and social and emotional development; academic areas, including five communicative arts, arithmetic, science, and social studies; and creative areas, including arts and crafts, dramatics and creative play, and music. The vocational program is also surveyed. Evaluation of the guidelines is discussed; 128 professional references, including tests and reading programs, are listed. Appendixes provide definitions of the brain injured child, forms used in the Texas program, and lists of suggested equipment, materials, and supplies. (JD)

ED 036 011 EC 004 852

Hennigan, Pecola K., Comp

Curriculum Guide: Primary-Intermediate.

Charlotte-Mecklenburg Public Schools, Charlotte, N.C.

Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.

Pub Date 69

Note—241p.

EDRS Price MF-$1.00 HC-$12.15

Descriptors—Arithmetic Curriculum, Art Education, *Curriculum Guides, *Educable Mentally Handicapped, *Exceptional Child Education, Handwriting Instruction, Health Education, Instructional Materials, Intermediate Grades, Language Arts, Learning Activities, Lesson Plans, *Mentally Handicapped, Primary Education, Reading, Science Curriculum, Social Studies, Spelling Instruction, Word Lists

Identifiers—Charlotte, North Carolina

Described as a working plan to assist elementary special education teachers in programming, the guide is prefaced by discussions of the philosophy of special education and the goals and characteristics of the educable mentally handicapped. The curriculum areas covered are language arts and the primary studies of language arts, reading, arithmetic, social studies, science, health and science, and art. The intermediate level of each area is also included with the addition of handwriting and spelling. The expected achievements in both ranges are indicated, and appendixes of the Dolch Basic Sight Vocabulary, signs, sample lesson plans, films, and a bibliography are provided. (JM)

ED 036 012 EC 004 853

Alston, Ray, Comp   Moody, Florence, Comp

Curriculum Guide: Junior-Senior High School.

Charlotte-Mecklenburg Public Schools, Charlotte, N.C.

Spons Agency—Office of Education (DHEW), Washington, D.C. Bureau of Elementary and Secondary Education.

Pub Date 69

Note—230p.

EDRS Price MF-$1.00 HC-$11.60

Descriptors—Arithmetic Curriculum, *Curriculum Guides, *Educable Mentally Handicapped, *Exceptional Child Education, Health Education, High School Students, Instructional Materials, Junior High School Students, Language Arts, Learning Activities, Lesson Plans, *Mentally Handicapped, Prevocational Education, Reading, Science Curriculum, Social Studies, Vocational Education, Word Lists

Identifiers—Charlotte, North Carolina

A continuation of the primary guide (EC 004 852), the curriculum guide for junior high and high school is introduced by a philosophy of special education and the characteristics and goals of the educable mentally handicapped. The curriculum areas for junior high include the language arts of listening, speaking, handwriting, spelling, and grammar; reading; arithmetic; social studies; science and health; and prevocational training. The same basic courses are covered for high school level courses with the addition of vocational information. The expected achievements of both groups are outlined, and the Dolch Basic Word List, sample lesson plans, graduation requirements, film lists, and a bibliography are appended. (JM)

ED 036 013 EC 004 869

Jones, Ray L., Ed

The Deaf Man and the World: Work - Love - Worship - Play. Proceedings of National Forum II, Council of Organizations Serving the Deaf (New Orleans, Louisiana, February 19-22, 1969).

Council of Organizations Serving the Deaf, Washington, D.C.

Spons Agency—Social and Rehabilitation Service (DHEW), Washington, D.C.

Pub Date 69

Note—96p.

EDRS Price MF-$0.50 HC-$4.90

Descriptors—Adults, *Aurally Handicapped, Counseling, Deaf, Employment Level, Employment Problems, *Exceptional Child Education, Family Relationship, Interpersonal Competence, Recreational Activities, Religious Factors, *Social Adjustment, Social Development, Social Integration

Papers and speeches concern the interaction of the deaf to a hearing world. Areas considered are the self concept of the deaf by Robert G. Sanderson, the problem of employment by Arthur G. Norris, underemployment by Abraham Stahler, the relationship of the deaf to his hearing family by Rosslyn Gaines Suchman, and personal counseling by Richard K. Johnson. Also included are discussions on the need for independence by Larry G. Stewart, community integration of the deaf by Robert R. Lauritsen, the world of religion by Rev. Rudolph E. Gawlik, and the world of recreation by Nanette Fabray. Appendixes provide information concerning the conference. (JM)

ED 036 014 EC 004 871

Roucek, Joseph S., Ed

The Slow Learner.

Pub Date 69

Note—373p.

Available from—Philosophical Library, Inc., 15 East 40th Street, New York, New York 10016 ($10.00)

Document Not Available from EDRS.

Descriptors—Counseling, Disadvantaged Youth, Dropouts, Economic Disadvantagement, English, *Exceptional Child Education, Gifted, *Learning Difficulties, Mathematics, Minority Groups, Motivation, Negroes, Preschool Programs, Programed Instruction, Retarded Readers, Sciences, *Slow Learners, Social In-

program. Based upon the knowledge and insights gained from interviews with personnel and from observation in one or more classrooms in each program category in each of the school districts included in the sample, the researchers do not believe that the lowest cost index programs provide appropriate models for program and fiscal planning over the next decade. Certainly, they were not exemplary programs.

The high cost indices ranged from a low of 1.28 in the intellectually gifted category to a high of 11.64 in the emotionally disturbed category. In a majority of the special programs, especially those which are relatively well-established, the range between the lowest and highest cost index district was not extreme—generally in the range of two or three to one. Closer examination of the extremely high cost index programs revealed that either the program was relatively new and still being developed, that it served a small number of pupils with a consequent high cost per pupil, or that it emphasized very intensive work with pupils as reflected in a very low pupil-professional staff ratio. Thus, the high cost index programs also do not provide an appropriate base for fiscal planning, although some of them may represent programs which are indeed on the "cutting edge".

The researchers believe that the median cost index programs afford the soundest basis for fiscal planning and forecasting. These programs reflect what might be termed average practice in a set of school districts chosen because they were recognized as providing high quality programs for exceptional children. The median cost indices ranged from 1.14 in the program for intellectual gifted pupils to 3.64 in the program for physically handicapped pupils.

Costs by Program Category

Data concerning programs for intellectually gifted pupils were obtained from five school districts. The highest reported expenditure per pupil for this program was $872; the lowest reported expenditure per pupil was $548; the mean expenditure per pupil was $759; and the median expenditure per pupil was $809. Examination of the components of expenditure revealed that the greatest variation from the regular program occurred for the functions of management and instruction.

A total of 22 districts reported data concerning expenditures for programs for educable mentally retarded pupils. Expenditure per pupil ranged from a high of $2,358 to a low of $708. The mean and median cost per pupil were identical—$1,316. Expenditure for instruction constituted the largest single component of expenditure for programs for educable mentally retarded pupils. However, the greatest variance from expenditure per pupil for regular programs occurred for the functions of management, instructional support (including specialized personnel), and transportation.

Twenty-two school districts provided data on educational programs for trainable mentally retarded children. The highest expenditure reported was $2,657 per pupil; the lowest expenditure reported was $562 per pupil; the mean expenditure per pupil was $1,532; and the median expenditure per pupil was $1,627. Instruction again was the largest single component of expenditure in this program category. Major differences from expenditure per pupil in the regular program occurred for the functions of instructional support, institutional operations, and transportation.

Eighteen districts provided programs for auditorily handicapped pupils. The highest reported expenditure per pupil for such programs was $4,671 and the lowest reported expenditure per pupil was $533. The mean expenditure per pupil was $2,067 and the median expenditure per pupil was $2,103. The largest single component of expenditure was for instruction. The greatest variance from expenditure per pupil for the regular program occurred for the functions of instructional support, institutional operation, and transportation.

Programs for visually handicapped pupils were reported by 17 school districts. Expenditure per pupil ranged from a high of $9,105 to a low of $852; the mean expenditure per pupil was $2,448; the median expenditure per pupil was $2,197. The expenditure for instruction again was the largest single component of expenditure. A substantially higher expenditure per pupil relative to the regular program characterized virtually all functions except health and food service.

A total of 15 school districts reported data on programs for physically handicapped pupils. The highest reported expenditure per pupil was $4,210; the lowest reported expenditure was $713 per pupil; the mean expenditure per pupil was $2,197; and the median expenditure per pupil was $2,113. Again, the expenditure for instruction was the largest single component of expenditure. A large variance in expenditure per pupil relative to the cost of the regular program was noted for the functions of instructional support (especially for other specialized personnel), institutional operation, and transportation.

A total of 21 programs for speech handicapped pupils were reported. The highest expenditure was $1,027 per pupil; the lowest expenditure was $541 per pupil; the mean expenditure per pupil was $794; and the median expenditure per pupil was $709. The largest cost differential was associated with the function of instructional support (primarily expenditures for other specialized personnel).

Twenty districts reported data regarding programs for pupils with special learning disorders and/or neurological handicaps. The expenditure per pupil for these programs ranged from a high of $2,874 to a low of $850. The mean expenditure per pupil was $1,703 and the median expenditure per pupil was $1,757. The expenditure for instruction again was the largest single component of expenditure in these programs. The largest differences in expenditure per pupil relative to the regular program were associated with the functions of instruction and instructional support.

Data regarding expenditures for programs for emotionally disturbed pupils were reported by 14 districts. Expenditures for this program ranged from a high of $6,982 per pupil to a low of $804 per pupil. The mean expenditure per pupil was $2,510; the median expenditure per pupil was $1,683. The expenditure for instruction again was the largest single component of expenditure. The largest variations in expenditure per pupil relative to the regular program were associated with the functions of management, instruction, instructional support, institutional operation, and transporation.

Only four districts provided special programs for multiple handicapped pupils. The highest expenditure per pupil reported was $2,830; the lowest expenditure reported was $1,339 per pupil; the mean expenditure per pupil was $2,013; the median expenditure per pupil was $1,941. The expenditure for instruction once again constituted the largest single component of expenditure. The largest variations in expenditure per pupil relative to the regular program were associated with the functions of instruction, institutional operation, and transportation.

Costs by Function

The expenditure for the function of instruction (salaries of teachers and teacher aides) represented the largest single component of expenditure for special education programs for exceptional children just as it did in programs for regular pupils. The data also revealed that the cost of transporting some types of handicapped pupils was very high. This was especially true in the case of crippled children, where specially equipped buses frequently were required. In nearly all of the districts which reported a minimal expenditure per pupil for transportation, special transportation arrangements were not made for handicapped pupils, leaving this as a parental responsibility.

Expenditure for the function of instructional support included the expenditure for guidance and counseling personnel and for other specialized personnel such as therapists, doctors, and nurses. Instructional support was an important component of expenditure in several programs where extensive use was made of such personnel.

The expenditure for institutional operations was directly related to class size. In most instances the classrooms we observed were regular classrooms which had been converted to use for special education programs. The lower pupil-teacher ratio which typically prevails in special education programs resulted in a larger square footage per pupil and thus increased the cost of operation and maintenance on a per pupil basis.

Consistency of Cost Indices

Bentley[8] utilized data obtained from the 16 school districts included in the sample for which complete information on expenditure for various components of the regular educational program was available to examine the nature and consistency of the cost differentials which existed between educational programs for exceptional children and regular educational programs. With regard to the expenditure components which contributed to cost differentials in programs for exceptional children, Bentley found that only expenditure for clerical and secretarial services and expenditure for food services did not contribute significantly to the cost differentials which existed between regular educational programs and special educational programs. All of the other expenditure components (administration, fringe benefits, instructional supplies and equipment, operation and maintainence, supportive services, teachers, teacher aides, and transportation) were found to contribute significantly to the cost differentials. However, the degree to which the various expenditure components contributed to the cost differentials varied considerably from district to district and from program to program.

Regarding the consistency and stability of the cost indices between regular and exceptional programs, Bentley found that only in the programs serving educable and trainable mentally retarded children were the cost indices consistent and stable between districts. With the exception of these two program categories, no consistent relationship was found between the level of spending by a district for its regular program and the level of spending by a district for the various categories of educational programs for exceptional children.

Bentley also found reasons to suspect that a relationship exists between expenditure per pupil in special education programs and the type of support provided by the state for special education (i.e., categorical aid vs. general aid for special education). Districts located in states which provided general aid were spending at a lower level than those located in states which provided categorical aid. However, the small sample size and the selective nature of the sample precluded a definitive statement regarding the relationship between type of state support for special education programs and the expenditure per pupil in such programs.

Marginal Cost of Special Education Programs

Table 2-2 illustrates how the special educational program cost indices identified in this study may be employed to determine the marginal cost of each special education program in a district in which the expenditure per pupil for the regular program is $655 (the median regular program cost in the districts in our sample). Column C (the product of Column A and Column B) represents the expected per

TABLE 2-2

ANTICIPATED PER PUPIL EXPENDITURE AND MARGINAL COST PER PUPIL IN SPECIAL EDUCATIONAL PROGRAMS FOR EXCEPTIONAL CHILDREN BASED UPON THE MEDIAN REGULAR PROGRAM COST OF DISTRICTS IN THE SAMPLE

Category of Exceptionality	A *Cost Index*	B *Median Regular Program Cost*	C *Special Program Expenditure (A×B)*	D *Marginal Cost of Special Program (C−B)*
Gifted	1.14	$655	$ 747	$ 92
Educable Mentally Retarded	1.87	655	1225	570
Trainable Mentally Retarded	2.10	655	1376	721
Auditorily Handicapped	2.99	655	1958	1303
Visually Handicapped	2.97	655	1945	1290
Speech Handicapped	1.18	655	773	118
Physically Handicapped	3.64	655	2384	1729
Special Learning Disorders	2.16	655	1415	760
Emotionally Disturbed	2.83	655	1854	1199
Multiple Handicapped	2.73	655	1788	1133
Homebound/Hospital	1.42	655	930	275

pupil expenditure for each special program in a school district which is spending $655 per pupil in the regular program. Column D may be interpreted as representing the marginal per pupil cost of enrolling each additional pupil in a given program. For example, each additional pupil who is placed into a program for auditorily handicapped pupils can be expected to increase the fiscal burden of the school district in the amount of $1,303. If a new auditorily handicapped pupil were to move into the school district, then the additional cost would be $1,958. Thus, Column C may be interpreted as representing the total cost to the district of new pupils who require placement in the special program.

THE COST OF EDUCATING EXCEPTIONAL CHILDREN IN 1980

To forecast the cost of educating exceptional children in 1980, one must have some knowledge of the prevalence of the various types of exceptionality. Unfortunately, the number of exceptional children in the United States has not accurately been established. There have been no comprehensive national studies to ascertain the prevalence of exceptional children on the basis of census information. The problem of determining the prevalence of children who may be classified under each of the various categories of exceptionality is further complicated by the variations that exist among the states in the definitions and criteria for identification of each exceptionality, by variations in the prevalence of various exceptionalities that occur from one area to another, and by incomplete data.

Prevalence Rates

In Table 2-3 are displayed various estimates of the prevalence of several types of exceptionality in the United States. The first widely used estimates were those published by Mackie and Dunn in 1954. These are shown in Column A of Table 2-3.

In Column D of Table 2-3 is reported the range of estimates provided by 11 states in conjunction with a project conducted by Operations Research, Inc., for the Bureau of Education for the Handicapped, U.S. Office of Education. (The other 39 states were still using the Mackie and Dunn estimates as a basis for their forecasting.) Perhaps the most disappointing aspect of the data presented in Column D is the wide range of prevalence reported for most exceptionalities.

TABLE 2-3

ESTIMATES OF THE PREVALENCE OF VARIOUS TYPES OF EXCEPTIONALITY IN THE UNITED STATES

Category of Exceptionality	*Estimates of Prevalence (%)* A[1]	B[2]	C[3]	D[4]	E[5]	F[6]	G[7]	H[8]
Gifted	2.0	2.0	N.E.	N.E.	N.E.	N.E.	2.70	2.00
Educable Mentally Retarded	2.0	2.3	2.3	2.0-4.0	1.30	1.28	1.10	1.30
Trainable Mentally Retarded				0.2-0.3	0.187	.18	0.24	0.24
Auditorily Handicapped	1.5	0.075	0.575	0.5-2.0	0.10	.08	0.10	0.10
Visually Handicapped	0.2	0.093	0.1	0.005-0.25	0.05	.03	0.05	0.05
Speech Handicapped	2.0	3.5	3.5	3.5-7.8	1.98	2.40	3.60	3.60
Physically Handicapped	1.5	1.0	0.5	0.1-1.0	0.028	0.028	0.21	0.21
Neurological and Special Learning Disorders	N.E.	N.E.	1.0	0.3-2.0		0.026	1.12	1.12
Emotionally Disturbed	2.0	2.0	2.0	1.0-2.2	0.50	0.05	0.58	2.00
Multiple Handicapped	N.E.	N.E.	N.E.	N.E.	0.07	0.029	0.029	0.07
TOTAL	11.2	10.968	9.975	7.65-19.55	4.215	4.103	9.729	10.69

N.E. — No estimate

[1] Estimates by Romaine P. Mackie and Lloyd M. Dunn, *College And University Programs For The Preparation Of Teachers Of Exceptional Children.* USOE Bulletin No. 13, Washington, D.C., GPO, 1954.

[2] Estimates by Romaine P. Mackie, Harold M. Williams and Patricia P. Hunter, *Statistics Of Special Education For Exceptional Children And Youth 1957-58*, USOE Bulletin OE-35048-58, Washington, D.C., GPO, 1963.

[3] Estimates prepared for Bureau of Education for the Handicapped, U.S. Office of Education, "Estimates of Current Manpower Needs in Education for the Handicapped, 1968-69," Washington, D.C., December, 1968, (Mimeo).

[4] Estimates provided by eleven states to Operations Research in conjunction with "State Survey and Information Flow Analysis" project for Bureau of Education for the Handicapped, U.S. Office of Education (Letter from Carl M. Kock, Principal Staff, Operations Research, Inc., 1970).

[5] Estimates developed from information contained in "Statewide Summary of Annual Reports on Handicapped Minors Not Participating in Special Education Programs", California State Department of Education, 1968. (Mimeo).

[6] Estimates developed from information contained in "1969-70 Summary of Special Education Services of Bureau for Special Education," Division for Handicapped Children, Wisconsin Department of Public Instruction, 1970 (Mimeo).

[7] Estimates based on data regarding pupils enrolled and pupils eligible but not being served in the school districts which comprised the sample in this study.

[8] Estimates used as a basis for population and cost projections in this study.

In columns E, F, and G of Table 2-3 are presented estimates based on data obtained from recent studies in California and Wisconsin, and from the 24 school districts sampled in this study. The data forms not only provided for obtaining information concerning the number of children currently enrolled in the various programs, they also provided for obtaining estimates by school district personnel of the number of children in the district who were eligible for each program but who were not currently being served. The studies in California and Wisconsin also attempted to approximate as closely as possible the total number of exceptional children in each state.

The extent of agreement among these three sources regarding prevalence rates in the categories where no serious definition problem is involved is impressive. The variations in the prevalence rates reported for the educable mentally retarded, the trainable mentally retarded, the auditorily handicapped, and the visually handicapped categories are very small.

The prevalence rate of pupils served by programs for the speech handicapped in the sample districts was higher than the prevalence rate estimated from data provided by the California and Wisconsin studies. However, it is likely that the programs provided by the districts in the sample involved more children with relatively minor speech handicaps than would the program in an average school district. The data obtained from the districts in the sample are considered to provide the most accurate available information regarding the prevalence of speech handicaps, at least for the purpose of projecting the number of pupils who could benefit from such programs.

The data obtained from the Wisconsin and California studies and from the sample districts may best be interpreted as indicating the prevalence of physically handicapped children who require special education programs, rather than the actual number of physically handicapped children in the population. Many physically handicapped children are totally integrated into the regular school program and require no special educational treatment. The data obtained from the sample districts and from the Wisconsin and California studies are considered to indicate quite accurately the prevalence of physically handicapped children who require special educational treatment.

Most authorities agree that the prevalence of gifted children in the general population is about 2 percent. However, some school programs define giftedness in such a way as to enroll a higher percentage of pupils. The percentage of pupils enrolled in programs for the gifted in the districts included in the sample was somewhat higher than the usual 2 percent. The Wisconsin and California studies did not provide data concerning the prevalence of gifted pupils.

As a result of the difficulty in distinguishing between the educational treatment indicated for the two categories, it was necessary to combine the category "neurological disorders" with the category "special learning disorders". The data for these two categories are also confounded by the fact that the special programs are poorly developed and children with these problems have not even been identified in many school districts. The true prevalence rates of these handicapping conditions is likely to be higher than the prevalence rates reported by the sample of school districts or the prevalence rates computed from data obtained from the California and Wisconsin studies.

Only a small number of the districts included in the sample reported data on programs for emotionally disturbed pupils. In general, programs for emotionally disturbed pupils are not well developed and many school districts do not offer such programs. Consequently, the earlier estimates (2 percent) may more nearly approximate the true prevalence of this exceptionality.

Data obtained from the California and Wisconsin studies and data obtained from the sample of school districts are in close agreement regarding the prevalence of multiple handicapped children. However, in educational programs for multiple handicapped children primary attention is concentrated on that handicap which most seriously impedes the child's learning at a given point in time. For example, the educational program for the blind child who is mentally retarded generally will first concentrate primarily upon assisting the child to compensate for his blindness; and, when reasonable progress has been made in this area, the child will be placed in a program for mentally retarded pupils. Thus, the category of multiple handicapped was not widely represented in educational programming at the present time.

In column H of Table 2-3 will be found the estimates of the prevalence rates of various categories of exceptionality which were used as the basis for forecasting the target population in each category. These estimates were based primarily on the data obtained from the districts included in the sample and on the data obtained from the California and Wisconsin studies. They were tempered by the research team's best judgement concerning the true prevalence of the various exceptionalities based upon the review of previous research and conversations with special education teachers and administrators, and other authorities in special education.

Population Projections

Projections of the population of the United States developed by the U.S. Bureau of the Census were used to forecast the population of children which may be expected in each category of exceptionality in 1980. Two projection series were used—Series I-B and Series I-D. Series I-B yielded more generous estimates of the population in 1980; Series I-D yielded somewhat more conservative estimates. These estimates are shown in Table 2-4. It should be pointed out that the estimates shown in Table 2-4 represent only an educated guess as to what the situation actually will be, since population projections must be viewed with caution, at best.

TABLE 2-4

ESTIMATES OF THE POPULATION OF THE UNITED STATES UNDER AGE 5 AND AGE 5-17, 1970 AND 1980* (IN THOUSANDS)

Population Category	*SERIES I-B*		*SERIES I-D*	
	1970	*1980*	*1970*	*1980*
Under Age 5	20,027	27,972	17,625	20,736
Age 5-17	53,026	57,084	53,026	48,694
Total	73,053	85,056	70,651	69,430

*U. S. Bureau of the Census, "Revised Projections of the Population of States: 1970 to 1985," *Current Population Reports*, Series P-25, No. 375, Series I-B, pp. 26-33 and Series I-D, pp. [illegible]2-49.

The total number of children in the age range 5 to 17 is expected to be approximately the same in 1980 as it is at the present time. The forecast under Series I-D calls for approximately 57,000,000 children in the age range 5 to 17; the forecast under Series I-D calls for slightly under 49,000,000 children in the age range 5 to 17. With the increasing emphasis on early identification and treatment of exceptional children, the change in the number of children under the age of 5 is of particular interest. The projected increase in the number of children under 5 years of age can be of great significance in planning educational programs for exceptional children. Under Series I-B, the forecast is for nearly 28,000,000 children under the age of 5 in 1980, an increase of nearly 8,000,000. Under Series I-D, the forecast is for close to 21,000,000 children under the age of 5.

Table 2-5 contains estimates of the population of children in each category of exceptionality in the United States in 1980. These estimates were obtained by multiplying the estimated prevalence of each exceptionality by the projected number of children under age 5 and age 5 to 17 in 1980. It should be emphasized, however, that not all children who meet the criteria for inclusion within a given category of exceptionality necessarily will require special educational treatment. Early identification and treatment often can either remedy or alleviate the child's handicapping condition and enable him to function adequately in a regular education program.

No attempt was made to prepare separate forecasts for each state. To the extent that a state or school district is representative of the nation, the prevalence rates shown in Table 2-5 can be applied to forecast the number of children which may be expected in each category of exceptionality. It is known, however, that the social and economic characteristics of a population are related to the prevalence of certain categories of exceptionality. Since the research team was unable to obtain accurate estimates of the prevalence of each category of exceptionality for each state, there existed no basis for forecasting the 1980 population of exceptional children in each of the 50 states on any basis other than the prevalence rates employed to forecast the population of exceptional children in the nation.

Cost Estimates

Table 2-6 provides estimates of the cost of providing educational programs of high quality for all exceptional children ages 5 to 17 in 1980. The cost estimates shown in Table 2-6 were based on the cost per pupil for current operation of regular educational programs. They were obtained by multiplying the cost index for each category of exceptionality by the cost per pupil of regular programs. The cost figure employed for regular programs, $655, was the average cost per pupil for current operation of regular programs in 1968-69 for the nation as a whole,[10] and corresponded exactly with the median cost per pupil for regular programs in the 24 districts which comprised our sample. The cost per pupil for each category of exceptionality was then multiplied by the estimated size of the population in each category. The cost of educating each category of exceptional children and the total cost for all programs were forecast in 1968-69 prices, in 1968-69 prices inflated 30 percent, and in the 1968-69 prices inflated 50

TABLE 2-5

ESTIMATES OF THE POPULATION OF CHILDREN IN THE UNITED STATES REQUIRING SPECIAL EDUCATION PROGRAMS IN 1980 BASED ON U.S. BUREAU OF THE CENSUS PROJECTION SERIES I-B AND I-D

Category of Exceptionality	*Estimated Prevalence (%)*	*Under Age 5*		*Age 5-17*		*Total*	
		Series I-B	*Series I-D*	*Series I-B*	*Series I-D*	*Series I-B*	*Series I-D*
Gifted	2.00	559,440	414,720	1,141,680	973,880	1,701,120	1,388,600
Educable Mentally Retarded	1.30	363,636	269,568	742,092	633,022	1,105,728	902,590
Trainable Mentally Retarded	0.24	67,132	49,766	137,001	116,865	204,133	166,631
Auditorily Handicapped	0.10	27,972	20,736	57,084	48,694	85,056	69,430
Visually Handicapped	0.05	13,986	10,368	28,542	24,347	42,528	34,715
Speech Handicapped	3.60	1,006,992	746,496	2,055,024	1,752,984	3,062,016	2,499,480
Physically Handicapped	0.21	58,741	43,545	119,876	102,257	178,617	145,802
Neurological and Special Learning Disorders	1.12	313,286	232,243	639,340	545,372	952,626	777,615
Emotionally Disturbed	2.00	559,440	414,720	1,141,680	973,880	1,701,120	1,388,600
Multiple Handicapped	0.07	19,580	14,515	39,958	34,085	59,538	48,600
TOTAL	10.69	2,990,205	2,216,677	6,102,277	5,205,386	9,092,482	7,422,063

TABLE 2-6

ESTIMATES OF THE COST OF PROVIDING EXCEPTIONAL PROGRAMS OF HIGH QUALITY FOR ALL EXCEPTIONAL CHILDREN AGE 5-17 IN THE UNITED STATES IN 1980, AT 1968-69 PRICE LEVELS, AT 1968-69 PRICE LEVELS WITH 30 PER CENT INFLATION, AND AT 1968-69 PRICE LEVELS WITH 50 PER CENT INFLATION

Category of Exceptionality	*Cost Index*	*Cost/Pupil Of Regular Program*	*Based on Population Series I-B (in thousands)*			*Based on Population Series I-D (in thousands)*		
			1968-69 Prices	*30 Per Cent Inflation*	*50 Per Cent Inflation*	*1968-69 Prices*	*30 Per Cent Inflation*	*50 Per Cent Inflation*
Gifted	1.14	$655	$ 852,492	$1,108,240	$1,278,739	$ 727,196	$ 945,355	$1,090,794
Educable Mentally Retarded	1.87	655	908,951	1,181,637	1,363,427	775,357	1,007,964	1,163,035
Trainable Mentally Retarded	2.10	655	188,445	244,978	282,667	160,748	208,972	241,122
Auditorily Handicapped	2.99	655	111,796	145,335	167,694	95,365	123,974	143,047
Visually Handicapped	2.97	655	55,524	72,181	83,286	47,363	61,572	71,045
Speech Handicapped	1.18	655	1,588,328	2,064,826	2,382,492	1,354,881	1,761,346	2,032,322
Physically Handicapped	3.64	655	285,808	371,551	428,713	243,801	316,941	365,702
Neurological and Special Learning Disorders	2.16	655	904,538	1,175,900	1,356,807	771,592	1,003,070	1,157,388
Emotionally Disturbed	2.83	655	2,116,275	2,751,158	3,174,413	1,805,233	2,346,802	2,707,849
Multiple Handicapped	2.73	655	71,451	92,886	107,176	60,949	79,234	91,424
TOTAL			$7,083,608	$9,208,692	$10,625,414	$6,042,485	$7,855,230	$9,063,728

percent. The latter two estimates provide an indication of the impact of price level increases on program cost without attempting to forecast precisely the amount of inflation which can be expected during the coming decade.

When estimates were based on the Series I-B projection, an estimated total cost of about $7.1 billion in 1969-69 prices was obtained. Inflation of 30 percent would increase the total cost to about $9.2 billion—with no increase in either the program quality or the size of the target population. Inflation of 50 percent could increase the total program cost to about $10.6 billion.

Estimates based on the Series I-D projection (a more conservative series) resulted in a total estimated cost of slightly over $6 billion in 1968-69 prices. Inflation of 30 percent would increase the cost estimate to well over $7.8 billion; inflation of 50 percent would increase the estimate to nearly $9.1 billion

The most costly single program would be that for emotionally disturbed pupils. Not only is the program itself quite expensive, but there is a relatively high prevalence of this exceptionality. Although programs for speech handicapped pupils are relatively inexpensive, the high rate of prevalence of this exceptionality makes it the second most costly program. Although programs for the auditorily handicapped and the visually handicapped are relatively expensive programs, the low prevalence rates for these two categories result in a rather low total program cost.

No estimates were made of the cost of providing special educational programs for exceptional children under the age of 5—primarily because no data were secured on which to base such estimates. However, early identification and treatment of handicapping conditions is strongly urged, for there is good reason to believe that timely diagnosis and treatment of such conditions as deafness, blindness, crippling, emotional disorders, and special learning problems will compensate for (or even alleviate) the condition, thus enabling the child to participate in a regular educational program with only a minimal amount of special educational help. It is considered likely that the additional cost entailed in providing early childhood programs for exceptional children eventually would be offset by the reduced expenditure for special programs for school-age children which would be realized as a result of early childhood programs. Initially, however, additional expenditures undoubtedly would be required.

Table 2-7 illustrates how the cost indices and prevalence estimates developed in this study could be utilized in fiscal planning by a hypothetical school district which has an average daily membership of 20,000 pupils and spends an average of $655 per pupil for the current operation of its regular educational program. By applying the prevalence estimates (or prevalence estimates based upon its own data), a school district could use the cost indices developed in this study and the estimated target population in each category of exceptionality to estimate the cost of providing special programs to accommodate the educational needs of children in each category.

TABLE 2-7

ESTIMATED SPECIAL PROGRAM COSTS FOR A HYPOTHETICAL SCHOOL DISTRICT HAVING 20,000 PUPILS IN AVERAGE DAILY MEMBERSHIP AND REGULAR PROGRAM EXPENDITURE OF $655 PER PUPIL

	A	B	C	D	E	
Category of Exceptional Program	*Prevalence Rate (%)*	*District ADM*	*Special Program Population (A × B)*	*Special Program Cost Index*	*Expenditure Per Pupil in Regular Program*	*Special Program Cost (C × D × E)*
Educable Mentally Retarded	1.30	20,000	260	1.87	$655	$318,461
Trainable Mentally Retarded	0.24	20,000	48	2.10	655	66,024
Auditorily Handicapped	0.10	20,000	20	2.99	655	39,169
Visually Handicapped	0.05	20,000	10	2.97	655	19,453
Speech Handicapped	3.60	20,000	720	1.18	655	556,488
Physically Handicapped	0.21	20,000	42	3.64	655	100,136
Special Learning Disorder	1.12	20,000	224	2.16	655	316,915
Emotionally Disturbed	2.00	20,000	400	2.83	655	741,460
Homebound—Hospital	0.22	20,000	44	1.42	655	40,924
TOTAL			1768			$2,199,030

Thus, the hypothetical district could anticipate that it would have 400 emotionally disturbed pupils and that it would cost about $740,000 to provide a special educational program for this group of pupils. Similarly, about 260 educable mentally retarded pupils could be anticipated at a total program cost of about $318,000.

The total cost of the nine special programs serving 1,768 pupils in this hypothetical district would be nearly $2.2 million.

FACTORS AFFECTING FISCAL PLANNING AND EDUCATIONAL PROGRAMMING FOR EXCEPTIONAL CHILDREN

During the course of this study a number of factors were identified which, in the research team's judgment, may affect significantly the nature and cost of educational programs for exceptional children during the coming decade. In some cases the ideas are supported by some empirical data; in other cases they represent intuitive or subjective judgments based upon classroom observations and interviews with special program personnel, as well as exploration of the literature of special education.

Planning-Programming-Budgeting in Special Education

The lack of data with regard to the financial resources and the resource configurations which are being applied in programs for exceptional children and, indeed, in all other programs operated by school districts, is appalling. The data employed in this study were laboriously gathered from a variety of sources within each of the participating districts. Without exception, the districts in the sample, which by any standard would be considered among the most progressive in each of the five states, did not maintain fiscal or personnel records which permitted them to identify easily the inputs to each program—much less to relate program inputs to program outputs.

Much has been written in recent years concerning program budgeting and cost-benefit analysis in education. Cost benefit analysis requires that quantifiable data be available concerning both the inputs to a program and the outputs from the program. The research team found that data concerning inputs to programs for exceptional children were exceedingly difficult to obtain and that data regarding program output were virtually nonexistent. In this study, for example, the research team was forced to rely upon a sample selected on the basis of reputation rather than on the basis of empirical evidence. Until such time as school districts maintain fiscal, personnel, and pupil records on a program basis, it will be impossible to determine the relative efficacy of alternative arrangements for educating exceptional children and to conduct meaningful cost-benefit analyses. In the absence of program-related data, fiscal and program planning will be haphazard, if not chaotic.

The research team was also disappointed to find very little being done in the way of program evaluation, or even in the follow-up of former pupils. And this was despite the fact that virtually all persons involved in educating exceptional children claim that one important objective of their program is to enable children to acquire the skills they will need to function effectively as adults. Conscientious evaluation of special educational programs for exceptional children, coupled with systematic feed-back of the results to those responsible for planning and programming, is an imperative need if such programs are to be improved.

Identification, Diagnosis, and Educational Treatment

Members of the project staff were impressed time and again with the importance of early identification of exceptional children, particularly those who are handicapped by conditions which are amenable to remediation or compensation. The earliest possible identification of such children is strongly urged. Although a massive program to identify such children very early in their life undoubtedly will be expensive, the pay-off is likely to be high if identification is followed immediately by placement in an educational program designed to remedy or compensate for the child's handicapping condition. In many cases, early diagnosis and timely treatment will enable a child to move immediately into the regular program when he starts kindergarten or first grade. However, delay in identifying the handicapping condition and failure to provide timely treatment may result in the child requiring continuing special treatment through his school career, if not throughout his lifetime.

Another important factor which will affect future fiscal requirements is that not all children affected by a handicapping condition will require special educational treatment. As noted above, early diagnosis and timely treatment often will enable a child to participate in a regular school program with only occasional help from a resource teacher.

A distinction may be drawn between programs where the primary concern is behavior modification and programs where the primary concern is cognitive learning. Obviously, both objectives are present in any educational program. In the case of trainable mentally retarded children, however, behavior modification is likely to assume primary importance when the goal is to enable the child to care for his physical needs. In the case of crippled children of normal or above normal intelligence, on the other hand, cognitive learning is likely to be the primary concern. In some programs, for example those for the emotionally disturbed, behavior modification is likely to be necessary before any significant cognitive learning can occur. From the standpoint of fiscal planning, a program in which the primary concern is behavior modification is likely to be more expensive than a program in which the primary concern is cognitive learning, primarily because behavior modification programs are more labor-intensive. That is, highly skilled personnel working with very small groups of children are required.

Organizational Arrangement

The sample of school systems employed in this study included both public school districts and intermediate educational agencies. Obviously some local school districts will never have a target population large enough to enable them to mount effective, efficient educational programs for many categories of exceptional children—at least at typical prevalence rates. In other cases, a school district may have a population large enough to provide quality programs for most categories of exceptional children, but not for all categories of exceptionality.

Alternative organizational arrangements are needed to accommodate the educational needs of exceptional children in situations where local school districts cannot provide adequately for their needs. In some states local school districts have banded together in cooperative arrangements where one district provides a program for one category of exceptional children, a second district provides a program for a different category, and so forth. In other states intermediate agencies, such as county units or boards of cooperative educational services, provide educational programs for exceptional children when local school districts are unable to do so in an efficient and effective manner. Even in states where school systems are organized on a county basis, however, a number of counties usually do not have a population base large enough to provide adequately for the educational needs of certain categories of exceptional children.

Organizational arrangements which will make it possible to provide all children reasonable access to educational programs of high quality are a necessity if equality of educational opportunity is ever to be attained. It would appear that cooperative arrangements involving groups of local school districts and programs for exceptional children coordinated by an intermediate unit offer feasible organizational alternatives. However, in the judgment of the research team, educational programs for exceptional children should be located in the same buildings, or at least on the same sites, where educational programs for normal children are housed.

In the literature the argument was presented that residential schools have "outlived their usefulness" and this argument was also encountered in conversatons with special education personnel in some of the sample districts. Many advantages can be cited for educational programs which permit exceptional children to remain with their families, and, whenever possible, organizational arrangements should be developed which permit the child to reside at home while he is participating in a special educational program. However, there are situations in which residential schools are fully justified. In sparsely populated areas, for example, it may be impossible to provide programs for exceptional children unless they are brought together in a residential school. In other instances the severity of the child's handicap, especially in the case of multiple handicapping conditions, may require specialized care and treatment which can only be provided in a residential center. However, such programs are considerably more expensive than day school programs and, from an economic point of view, can be justified only when alternative arrangements are unsatisfactory.

The researchers noted in their visits to the sample school districts the importance of close coordination between the public schools and other community agencies which deal with exceptional children. In many instances significant contributions were being made by service clubs, church related organizations, and special interest groups. Coordination with other agencies offering services for exceptional children must be regarded as an important task of the administrator of programs for exceptional children.

The long-standing argument between those who favor segregation of exceptional children in special classes and programs and those who favor integrating exceptional children into regular classroom programs as rapidly as feasible remains unresolved, although the latter group appears to be dominant at the present time. In virtually all of the school districts in the sample it was stated explicitly that one major objective of the special education program was to remediate or compensate for the handicapping condition which resulted in the child's placement in the program so that he could return to a regular classroom program with "normal" pupils. In visits to sample school districts many instances were observed in which a handicapped child was performing quite adequately in a regular classroom situation. Admittedly, some pupils whose handicaps are not amenable to remediation or compensation can never be expected to function adequately in a regular classroom situation, and for them special classroom treatment is unavoidable. For many exceptional children, however, fusion into a regular classroom program is feasible and desirable from both a developmental and economic point of view.

Facilities for Special Educational Programs

Great variation was noted in the facilities provided for special education programs in the districts included in the sample. In some instances new facilities had been designed especially for the educational program they housed and, in the same district, programs were housed in sub-standard classrooms or modified storage rooms. The research team was impressed by the greater vitality and enthusiasm exhibited by special education personnel in situations where they were housed in adequate facilities and provided with all of the equipment necessary to perform their tasks effectively.

The research team was not enthusiastic about the provision of entirely separate facilities for exceptional education programs, except perhaps in situations where no other alternative is feasible. In the team's opinion, exceptional children should be housed on the same site, and preferably in the same building, as children engaged in regular educational programs. Thus, the team views with some concern the developing trend in some intermediate units and cooperative agencies to construct school buildings for exceptional children which are isolated from the school buildings which house children in the regular educational program.

The Resource Room Concept

One of the most promising concepts encountered was that of the "resource room." The development of this concept may result in the provision in every school building of a space where pupils can be tested and their learning problems diagnosed; where specialists can prescribe appropriate educational activities to remedy the problems; and where specialized instructional equipment and materials can be made available. In this arrangement each child is dealt with individually, his specific learning problems are diagnosed, and a prescription of the recommended educational treatment is provided the child's regular teacher. This enables the regular classroom teacher to work with each child who has learning difficulties, whether moderate or severe, by utilizing special learning equipment and materials and following a plan prescribed by a specialist in learning problems.

Teacher preparation programs typically do not provide adequate training in the diagnosis and remediation of learning disabilities. Very few elementary teachers are able to diagnose specific learning problems, much less treat them properly. While it would be desirable for regular classroom teachers to be more knowledgeable in this area, it appears more efficient to rely upon specialists who are trained in the diagnosis of specific learning problems and who are able to recommend methods for dealing with such problems. While knowledge in this area is still sketchy, it is possible that the development of diagnosis-prescription-treatment orientation in dealing with exceptional children would eliminate much of the need for special classrooms in which exceptional children are dealt with in isolation from normal children.

Classification of Special Education Programs

There is need for a taxonomy of special educational programs which is based upon educational treatment rather than upon medical and psychological criteria. Little difference was noted in the educational treatment provided pupils in several of the categories of exceptionality identified in the original taxonomy. For example, the category of neurological disabilities was combined with the category of special learning disorders, both because of the observed similarity in educational treatments and because of the overlapping criteria for placement in these categories. The term "educationally handicapped", which is used in California, appears to convey much more adequately the notion that the educational treatment which will meet the unique needs of the child may be much more important than the specific medical, psychological, or psychiatric criteria for placement in the program.

The Impact of Science on the Need for Programs

Scientific and technological developments undoubtedly will affect future needs in special education. While the impact of future developments cannot be forecast with precision, the impact of past scientific achievements is obvious. The development of Salk vaccine for the prevention of poliomyelitis has greatly reduced the incidence of crippled children; the discovery that retrolental fibroplasia was caused by a high oxygen content in the incubators of infants has reduced the incidence of blindness, at least from this particular cause; and the development of an effective vaccine for prevention of German measles is likely to affect significantly the incidence of handicapping conditions such as deafness, blindness, and crippling that have occurred in children born to women who sustained German measles during pregnancy.

On the other hand, some new drugs have had serious adverse consequences. Thalidomide is a striking example. The effect of many stimulants, depressants, and hallucinogens on the prevalence of various handicapping conditions is yet to be determined. Also to be noted is the fact that modern medical technology permits the sustenance of life in many infants who in former years would have died because of their crippling or handicapping conditions. It is likely that many of the multiple handicapped children who are beginning to appear in school programs for exceptional children would not have survived infancy in past decades.

The increasing acceptance of birth control and the development of simpler, more effective methods of birth control also may influence significantly the prevalence of exceptional children in the total population. However, the impact of these developments is very difficult to forecast at the present time.

Among the developments which appear on the horizon is the prospect of "genetic engineering" as a result of recent discoveries concerning the chemistry of inheritance. It may be possible at some future time to identify and replace defective genetic material, thus avoiding the occurrence of inherited crippling or handicapping conditions.

Knowledge which is accumulating concerning the chemical nature of learning also may affect educational programs for exceptional children. The potential development of drugs which will facilitate or inhibit learning and memory may lead eventually to synthesis of the chemical components of learning.

Any attempt to forecast future needs and the nature of future programs for educating exceptional children is subject to considerable error. New applications of existing knowledge, as well as the acquisition of new knowledge, may affect radically both the need for programs for exceptional children and the nature of the educational treatment provided for such children. However, given the pace of change which has prevailed in schools in recent years, it seems likely that average educational practice in 1980 will resemble the best current practice of today.

FOOTNOTES

1. U. S. Congress, House, *Message From The President of the United States on Educational Reform*, 91st Cong., 2d Ses., 1970, House Doct. No. 91-267, p. 3.

2. See, for example, R. Freeman Butts and Lawrence A. Cremin, *A History of Education in American Culture*. (New York: Henry Holt and Co., 1953), pp. 190-213, 357-70, 516-25, 571-84.

3. Samuel A. Kirk, *Educating Exceptional Children*. (Boston: Houghton-Mifflin, 1962), pp. 4-5.

4. Richard A. Rossmiller, "Dimensions of Need for Educational Programs for Exceptional Children," *Dimensions of Educational Need*, ed. R. L. Johns, Kern Alexander, and Richard A. Rossmiller. (Gainesville, Fla.: National Educational Finance Project, 1969), pp. 70-85.

5. The six persons who provided recommendations for the sample of states were John W. Kidd, Assistant Superintendent, Department of the Mentally Retarded, Special School District of St. Louis County, Missouri; Hans A. Mayr, Superintendent, El Dorado County Office of Education, Placerville, California; John W. Melcher, Assistant Superintendent, Wisconsin Department of Public Instruction and President, Council for Exceptional Children; Maynard C. Reynolds, Chairman, Department of Special Education, University of Minnesota; Harvey A. Stevens, Superintendent, Central Wisconsin Colony and Training School, Madison, Wisconsin; and Frederick J. Weintraub, Assistant Executive Secretary, Council for Exceptional Children, Washington, D. C.

6. See, for example, *School Staffing Survey Instructions and Definitions, Form A*, OE No. 2313, Washington, D. C.: U. S. Office of Education, National Center for Educational Statistics, Spring, 1969.

7. Archie A. Buchmiller, "Analysis of Expenditures in Wisconsin School Districts for the Development of An Expenditure Index" (unpublished Ph.D. dissertation, University of Wisconsin, 1970), pp. 180-90.

8. Ronald W. Bentley, "An Exploration of Relationships Between Expenditures for Educational Programs for Exceptional Children and Expenditures for Regular Educational Programs" (unpublished Ph.D. dissertation, University of Wisconsin, 1970).

9. Personal letter from Carl M. Koch, Principal Staff, Operations Research, Inc., May 14, 1970.

10. Research Division, National Education Association, *Rankings of the States, 1970*, Research Report 1970-R1 (Washington, D.C.: NEA, 1970), p. 59.

CHAPTER 3

Education Programs For the Culturally Deprived[1]

-Need and Cost Differentials-

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A review of pertinent writings on educational programs for the culturally deprived indicates that compensatory education has a variety of meanings, that its effectiveness is questioned and debated, and that the size of its target population differs according to the various assumptions underlying estimates. Precise national statistics on the population, the programs, or their costs are lacking. The need for additional data is clear.

PLAN FOR THE STUDY

The plan for this study of the need and cost differentials for compensatory education programs was developed after a preliminary study of the data available or obtainable in California, Illinois, and New York. Possible sources of information on the target population, the programs provided, and the expenditures for them were sought.

Although it was possible to locate many program descriptions and some state evaluations of the programs, firm statistics on the target population and the expenditures for the programs were impossible to find or to derive from the available records. It was assumed that if they were not obtainable from the foregoing states, the data could not be obtained in other states. Plans were developed to obtain estimates of them at least.

Purposes of Study

The foregoing preliminary finding led to a restatement of the purposes of the study, with more emphasis on methods of estimating missing data and on a re-examination of the assumptions upon which the study was conceived originally.

The purposes of the study were revised to read:

1. Develop and test a method for estimating the target population to be served by compensatory education.

2. Prepare estimates of the size of that population indicating the varying extent of its needs for such education.

3. Describe the inputs for selected compensatory education programs used to serve the target population in selected states.

4. Estimate the cost differentials of such programs relative to the cost of regular school programs based upon data from No. 3.

The study was planned on the assumption that compensatory education is a separate school program. It is entirely possible that the lack of data might be indicative of compensatory education not being a discrete program amenable to program accounting. This possibility became an increasingly plausible working hypothesis as the study evolved.

In designating compensatory education as a program area the National Educational Finance Project made the explicit assumption that its cost differentials, if determinable, "will not vary significantly from one district to another." The wide variety of program descriptions found suggested that this assumption too should be carefully watched as the study proceeded.

Definition

The definition of compensatory education adopted for purposes of the study is:

> Compensatory education means special programs or program adaptations designed specifically to overcome learning difficulties or handicaps in schools associated with poverty, class or status, national origin, race cultural background, home conditions generally, as distinguished from organic causes.

Need was defined in a context appropriate for distributing funds among schools in a school system or among school systems in a state. Presence of the target population might be indicative of need for compensatory education or some other special treatment, but it might not be indicative *per se* of need for additional funds. To demonstrate the latter, it has to be shown that compensatory education adds to the cost of education. The existence of a cost differential between compensatory education programs and the regular school program could be evidence of this type of need.

It is possible that the compensatory education programs observed might not be the most economical in terms of their relative effectiveness. It also is possible that compensatory education may not be the most effective way to overcome the learning difficulties regardless of cost. However, such questions were not within the scope of the study. It was concerned primarily with the cost impact of compensatory education as defined.

Selection of States and School Systems

The selection of states and school systems was made according to certain common procedures prescribed by the National Educational Finance Project. In various phases 14 states were involved. For purposes of testing a method of estimating the target population, the primary criterion for selection was having a concentration of the population. However, problems of obtaining data precluded some states with the heaviest concentrations from being included, e.g., California. This phase of the work was done in Alabama, Minnesota, New York, Pennsylvania, and Rhode Island under the direction of James A. Kelly and Walter I. Garms of Teachers College, Columbia University.

The primary criterion for selecting states and school systems for purposes of program description and expenditure estimation was the existence of "exemplary" programs. A panel of compensatory education specialists was asked to assist in formulating the criteria and procedures for selecting and recommending programs for study. Specialists in the various state education departments also were consulted. This phase of the study was conducted largely in five states: California, Florida, Michigan, New York, and Texas. Connecticut, Indiana, Tennessee, and Wisconsin were used as a test group. Illinois was included in the preliminary study. The work was done under the direction of Professor Arvid J. Burke at State University of New York at Albany.

The National Advisory Panel orginally included Anita Allen of the United States Office of Education who subsequently resigned; Edmund W. Gordon of Teachers College, Columbia University; Jerome T. Murphy, formerly with the National Advisory Council for Education of Disadvantaged Children; Wilson C. Riles of the State Department of Education in California; and Doxey A. Wilkerson of Yeshiva University.

Limitations of Data

The necessity of selecting states and school systems in terms of availability of data and willingness to cooperate and the necessity of keeping the number small due to the difficulties of obtaining data, as well as concern for program effectiveness, do not assure that the samples are representative of the nation or of the individual states included.

Broad generalizations about the need for or the cost of compensatory education have been avoided. However, it is assumed that the study did permit a testing of methods of estimating missing data. It also is assumed that the study does provide some clues as to the realism of the assumptions upon which it was based.

Specific problems of selection and estimation of data will be discussed in the sections which follow.

TARGET POPULATION

When the study was being planned the target population was defined as follows:

> The target population to be studied includes children who are encountering such[2] learning difficulties or handicaps in elementary and secondary schools, in so far as possible avoiding overlap into the target population for exceptional children, early childhood education, vocational and technical education, and parent or adult education.

It was found that this definition assumed the availability of data that simply are not obtainable. Diagnostic facilities for classifying learning difficulties according to organic or environmental roots simply do not exist. Furthermore, the methods developed for estimating the target population are not refined enough to prevent overlap with other target populations.

The popular concept of compensatory education is based primarily on programs funded through Title I of the Elementary and Secondary Education Act of 1965. These programs typically have been directed at overcoming or circumventing environmental and/or educational deficiencies of "disadvantaged" children. They have been criticized, however, on grounds that many of them fail to reveal measurable gains in achievement and that they imply an inherent inferiority in the ability of poor and non-white children to achieve in school. Others criticize compensatory education on grounds that by providing schools with additional funds for new services, it overlooks the necessity of substantial reform in how schools now are organized and operated. Although they may be valid, such criticisms were not the subject of this study. It assumes that whatever arrangements are used to provide appropriate educational experiences to children of poor families, some method probably will be needed to identify groups and children for whom particular types of services are needed. Hopefully, the concepts and procedures used in this study will be helpful in those efforts.

Assumptions

The study is based on two assumptions concerning the role of schools in American society. First, the educational system should operate positively to further equality of opportunity rather than passively to perpetuate societal differences. Second, the educational system is able to affect achievement levels and rates of learning.

These assumptions are used despite evidence that the gap between rich and poor is not being narrowed in America's schools, regardless of whether the gap is measured in terms of school characteristics or student achievement. The study accepts the emerging ethic asserting that equity in education can only be measured by examining the results of school (e.g., achievement, drop-out rates) and that it is:

> . . . unacceptable for public policy to allow public schools to operate in such a way that identifiable classes of children, such as non-whites and the poor, consistently receive an in-

> ferior level of school services, achieve at low levels in school, drop out of schools in large numbers, and thus fail to acquire through their schooling the means by which they may have an 'equal chance' in their lives.[3]

The study assumes that educational need cannot be defined without reference to educational achievement, and that a need for compensatory education, however the term may be defined, exists wherever there are consistent and significant differences in average levels of achievement among racial, economic, and social groups.[4] It is not implied that individuals are expected to achieve equally or identically, because individual difference in ability, industry, and rate of learning clearly rule out any such possibility. The definition does suggest that there would be no need for compensatory education if the correlation between socio-economic status and achievement were reduced to zero, or at least to an insignificant level.

Methods of Estimation

The most direct measure of educational need as here defined is pupil achievement as indicated on standardized test scores. However, one eventual use of all NEFP studies is to develop ways of allocating educational resources, and there are at least three factors which made questionable the use of test scores as a sole criterion for the allocation of resources. They are, in brief, that low scores may simply reflect inefficient education, that there are questions regarding the reliability and validity of standardized tests for disadvantaged children, and that increases in test scores would have to result in lower allocations of resources if aid were being allocated inversely in relation to achievement.

A second alternative, and the one chosen for this study, is to find socio-economic (SES) factors which correlate highly with achievement and thus can be used as acceptable predictors of achievement scores within our definition of need for compensatory education.

Variables for testing the SES-achievement relationship were selected in the context of a decision to use the individual school as the unit of analysis. This decision was made because it was the most discrete unit at which, under ideal conditions, there would be minimal correlation observed. The school district seemed too large a unit, concealing rather than revealing concentrations of disadvantaged children; and the individual pupil was too small a unit, because we should always expect substantital individual differences in achievement.

This method limited the selection of states for study to those for which state-wide testing data could be obtained. These are listed in the first section.

Separate studies were conducted for each selected state. In each case, the procedure was to obtain a random sampling of schools containing a particular grade for which state-wide testing data were available, and within each school to draw random samples of pupils. In New York, Minnesota, and Alabama, socio-economic data were gathered through questionnaires sent out by us to the individual schools. In Rhode Island and Pennsylvania, this was not possible, but it was possible to use current socio-economic data obtained through the state's testing programs.

The basic socio-economic variables used in the studies were ethnicity/race (e.g., percent of Puerto Ricans in the school); broken homes (percent of students not living with both parents); welfare (percent of students whose families receive Aid to Dependent Children); parent education (mean years of schooling of father, when present in home, otherwise mother); overcrowded housing (percent of students living in dwellings with more than one person per room); and student mobility (mean number of schools attended by students during the last three years). It was not possible to use all variables in each state because of technical problems in data collection.

A multiple linear regression model was used to test the predictive power of the socio-economic variables for each state. The predicted criterion was operationalized as the percent of students expected to score below the fourth stanine in achievement, although comparisons were made between regressions using mean expected achievement scores and the fourth stanine measure of low achievement.

Findings and Conclusions

Coefficients of determination (R^2) were as follows: New York, .71; Pennsylvania, .66; Minnesota, .48; Alabama, .42; and Rhode Island, .31. Thus, in New York, about 70 percent of the variance is explained, in Pennsylvania, about 60 percent, in Minnesota, about 50 percent, in Alabama, about 40 percent, and in Rhode Island about 30 percent.[5] Among interpretations drawn from the regressions are the following (see full report for detailed discussion):

1. The results range from highly satisfactory to disappointing.

2. An insufficient number of available socio-economic variables partially accounts for the poor results in Rhode Island.

3. The use of only percent non-white and parent education causes a relatively slight reduction in the amount of variance explained; this holds for all states except Minnesota, where the percent non-white is small and actual socio-economic variation must be measured through other variables.

4. States in which high levels of prediction were not possible differ from the others in terms of their profiles on available socio-economic indices. For these states, predictor variables other than those available to the study will probably yield higher R^2 values.

5. Little differences in R^2 were observed when polar and nonpolar indices of socio-economic variables were tested. Similarly, little difference was noted when polar and nonpolar achievement measures were compared through separate regressions, although polar measures (of low rather than mean achievement) resulted in higher R^2 scores.

In general, it was concluded that the use of SES variables to predict educational achievement is an approach to the measurement of need for compensatory education. But the same set of predictor variables is not appropriate for all states. The choice of variables carefully must take into account the nature of socio-economic variation within that state. When such is done, it should be possible to obtain for most states substantial levels of prediction of need for compensatory education on a school-by-school, current basis.

National Estimates and Their Limitations

The second objective of this study was to prepare national estimates of the size of the target population requiring compensatory education, and where possible, to project the estimate to 1980.

Any estimate of the compensatory education target population should be based on the same method used to analyze need for compensatory education in the state studies just reported. The model used in the state studies essentially consisted of a weighted sum of socio-economic measures predicting the present numbers of pupils below a fixed standard of achievement in mathematics and reading;

the standard used was the fourth stanine. Hopefully, such state studies could be extended and the data used for national estimates.

Actually, however, the second objective is considerably more difficult to achieve than the study's first and primary objective of developing and testing a method for identifying the target population to be served by compensatory education. The basic difficulty is that key data needed for the regressions used in the state studies simply are unavailable from national samples. For example, sampling problems of the *Equal Educational Opportunity Survey* (Coleman, et. al.) are particularly severe in cities where a large segment of the target population for compensatory education is presumed to reside. Data from Project Talent are old (obtained for 1960) and lack the SES variables required. The National Assessment Program, as of this writing concluding its first operational year, has test scores available only in the areas of citizenship, science, and writing, (not reading or mathematics, the two areas of achievement used here as criteria of a need for compensatory education services). In addition, the infrequency of the decennial census deals a crippling blow to studies of current demographic phenomena near the end of a decennial period.

Because raw data are not available for the SES and achievement variables on a national basis, regression weights cannot be calculated, and current and projected national estimates cannot be made using the SES achievement prediction model used for the state studies.

But even if accurate and current data were available, projecting these data a decade ahead and developing estimates for 1980 can be a slippery business. Economic uncertainty surrounds the estimate on all sides. The Federal budget deficits, the Vietnam war, the chronic balance of payments deficit, the stock market decline, and the simultaneous occurrence of inflation and recession are some of the more important instabilities facing any estimate involving socioeconomic data.

These and other problems led to the conclusion that no single way of defining and measuring a target population for compensatory education should be used to prepare national estimates. Instead, four general criteria for judging the adequacy of any measure of a target population for compensatory education were developed, and then four alternative measures of need for compensatory education were considered. These criteria are presented within the framework of the definition of "need for compensatory education" as low achievement and low SES. The four criteria were:

1. Are the measures objective and unambiguous?

2. Can the measures identify target populations by school building or neighborhood?

3. Do the measures identify the varying extent to which target populations need compensatory education services?

4. Are the measures annually available?

The rationale for the first criterion is self-evident. The second criterion is based on the rationale summarized previously for using the school building as the unit of analysis in the state studies. Intradistrict differences among school buildings are frequently concealed by the use of district averages, while use of school-by-school data allows city, state, or even Federal officials to focus resources where specific problems exist. The third criterion suggests that identifying target areas is not sufficient; the measures should allow quantification, in some way, of the varying extent of need in each school building.

The fourth criterion is important because of rapid population mobility patterns among the population as a whole and the poor in particular. Student turnover in some urban schools exceeds 100 percent within a single school year. To rely heavily upon decennial census for population characteristics for specific neighborhoods or schools will not provide credible data on the compensatory education target population.

Each of four alternative measures for identifying compensatory education target populations were reviewed in terms of the four criteria. The four alternative measures are:

1. The proportion of students in a school below a stipulated standard on an achievement test.

2. The proportion of students in a school predicted to be below a stipulated standard on an achievement test, based upon student socio-economic status.

3. The proportion of students in a school whose families are below a stipulated income level (the measure used for Title I of the Elementary and Secondary Education Act).

4. The proportion of students in a school who are nonwhite plus all whites below a stipulated income level.

The rationale for using the first measure—low achievement—stresses the central importance of analyzing achievement of pupils as a criterion of need for compensatory education. It can be argued that low achievement is *prima facie* evidence of need for additional educational services, and it is a far more direct measure of need than indices of school district wealth or parental poverty, for instance. But it is clear that serious difficulties would be encountered in the practical use of this measure; these difficulties were discussed earlier in connection with the use of achievement test results for resource allocation purposes.

While this measure would always result in the same percentage of students in the target population on a national basis (23 percent if the fourth stanine is used), local and state subdivisions could vary substantially. Some localities could find as few as 10 percent of their students below the national fourth stanine, while in other districts 50 percent or more of the students could be below the standard. Use of this measure would clearly require substantial new testing programs administered nation-wide, at least to national samples of students. If local and state discriminations were desired, sampling arrangements different from those used by National Assessment would be required.

The total school-age population in 1970 is approximately 53 million children.[6] If the target population is 23 percent of the school age population, the number of children in that category would be 12,190,000 for 1969-70. Projecting ahead to 1980, the school age population is estimated to be approximately 61,200,000. About 14,076,000 children would be within the target population for that year if the fourth stanine standard were used. (About 4 percent of the school age population is mentally retarded or physically handicapped, according to the U.S. Office of Education; thus, removing these children from the compensatory target population results in net estimates for 1970 of 11.7 million children, and for 1980 the comparable figure is 13.5 million children.)

The second alternative measure, socio-economic prediction of achievement, extensively discussed earlier, needs little further discussion here. This method links a measure of low achievement (*prima facie* evidence of need for additional educational services) with measures of low socio-economic characteristics (the presumed cause of low achievement among the poor). Use of the method does not change the size of the national target population reported for the first method, because this method also utilizes an arbitrary standard, the fourth stanine, for the criterion test scores. The method would also allow discrimination at state and local levels, because the number predicted to be below standard would vary widely from place to place. The SES and achievement data required to implement this procedure are not now available, but the data could be available if a nation-wide procedure were implemented each year similar to the procedures we followed in our study within the five states.

The third alternative of measuring a national target population for compensatory education is to calculate the proportion of students whose families are below a stipulated income level. There are two basic rationales justifying the inclusion of income as one way to determine the target population for compensatory education. First, family income correlates extremely well with student achievement in reading and mathematics. Second, it is expedient to utilize the same measure used for Title I of the Elementary and Secondary Education Act of 1965.

The method of determining the number of eligible pupils within Title I is to add the number of children in families whose income in 1959 (1960 Census) was below $2000 and the number of children whose families were receiving more than $2000 per year in Aid to Dependent Children (ADC) in January 1970, as reported by welfare officials.

There is obvious double counting, but there are other serious shortcomings in this method. First, the measurement is arbitrary in that persons only slightly above the maximum income level are excluded. Second, regional differences in price level are not taken into account, a factor substantially biasing the measure by inflating, relative to the north, the number of southerners eligible under the income criterion, and biasing in the opposite direction by inflating the number of northerners eligible under the welfare criterion. Third, the welfare measure is suspect because of significant inter-state differences in the way eligibility for welfare is determined. Fourth, the method is further suspect because state welfare eligibility criteria are subject to change over time at the discretion of 50 state legislatures. Finally there are discontinuities associated with relying on decennial census data.

The present Title I formula, using a $2000 income criterion plus those receiving more than $2000 from ADC, (including children classified as delinquent, neglected, and in foster homes) results in an eligible pupil population of 6,952,297 for 1970, according to the U.S. Office of Education. If the income criterion is raised to $3000 approximately 2.4 million additional children become eligible. If the income criterion is raised to $4000, the total number of eligible pupils would rise to approximately 12 million. Excluding the 4 percent estimate for physically handicapped and mentally retarded children, the target populations are estimated for 1970 at 6,674,205 using the $2000 income criterion; 8,978,000 at $3000; and 11,250,000 at $4000. (Note that unless the income criterion is adjusted upward, there will be a decrease in the number of eligible pupils using the fixed $2000 figure, because the number of families whose income is below $2000 is expected to decline sharply in the 1970 Census as compared to the 1960 Census.) The actual number of persons, age 0-18, living below the $2000 income level declined from 11,386,000 in 1959 to 6,373,000 in 1968. It is stressed that welfare and income projections are dependent on, respectively, future political decisions and income distributions.

A fourth alternative method of estimating the national target population for compensatory education is to include all non-whites and white poor children. This method combines the two factors most closely identified by the general public and educational researchers with the twin conditions of socio-economic disadvantage and low educational achievement. The method requires no complicated statistical procedures, and it explicitly takes into account generations of damaging discrimination and racism directed against non-whites. Both variables are used now by the Federal government in its aid to education efforts, through Title I of the Elementary and Secondary Education Act (income) and through President Nixon's $1.5 billion aid program for desegregation (race). The method is subject to the drawbacks of decennial census data. In addition some may criticize this method on grounds that it treats races differently. (The reply to this assertion must rely upon the assumption that regardless of income there are damaging inter-generational effects of three and a half centuries of racial discrimination in this society, in which the normal condition for its black population for a period of almost 250 years was legalized slavery.) Further, the method may legitimately be criticized on grounds that not all non-whites and poor whites do poorly in school. The seriousness of this criticism is underlined by the original definition of need for compensatory education as consistent patterns of low school achievement among large groups of the population.

Using such data as have become available since the 1960 Census, it is estimated that a school age target population for 1970 is 12,868,280, of which poor whites are 4,602,715 and non-whites are 8,265,465. Reducing this estimate by the 4 percent factor for retarded and handicapped children, the net target population is estimated at

12,453,559.

It is evident from these estimates that the method of defining and measuring the target population can have an important effect on the size of the estimate. Perhaps, a reasonable estimate, using Title I data, is that with the $3000 income and welfare criterion a target population of 8,978,000 is estimated for 1970. This constitutes about 18 percent of the nation's enrolled pupils, K-12, in 1970. But the only way of determining how well, or indeed, how poorly, schools are educating the compensatory education target population, however defined, is by monitoring over time the actual achievement levels of children within the target population.

PROGRAM DESCRIPTIONS

Selection of States and School Systems

It was hoped, when it was being planned, to limit the study to compensatory education programs selected as "exemplary" according to the criteria formulated by the American Institutes for Research in the Behavioral Sciences. They had selected 32 programs in 21 school systems in nine states and the District of Columbia. However, some of these programs were not being financed in 1968-1969, some were not being financed as part of a public school operation, and most of them tended to be in the larger cities. The common procedures prescribed by the National Educational Finance Project called for school systems varying in size, location, fiscal capacity, social conditions, and other factors.

It was possible to retain 14 programs selected by the Institutes in nine school systems in six states. They are starred below:

State	*Number*	*School System*
California	5	Los Angeles*, Oakland*, Paramount, Pomona*, and Redondo Beach
Florida	4	Columbia, Dade, Duval, and Holmes Counties
Michigan	4	Big Rapids, Detroit*, Grand Rapids, Ypsilanti
New York	5	Buffalo*, Cobleskill, New York City*, Rochester, Syracuse
Texas	4	Austin, Brenham, Galena Park, Waco

Test Group

Connecticut	1	Hartford*
Indiana	1	Indianapolis*
Tennessee	1	Overton County
Wisconsin	1	Milwaukee*

*American Institutes' Selection

The other 17 programs were selected upon the basis of recommendations of the National Advisory Panel and/or of specialists on compensatory education in state education departments. Heavy reliance had to be placed upon the latter in order to get diversity since the recommendations of the panel tended to be confined to programs in the larger school systems. Florida was included on panel recommendation. Tennessee and Texas were included after consultation with the staffs of the Project and the United States Office of Education in order to get greater geographic spread, smaller places, and sharper differences among systems.

The 31 selected programs in 26 school systems were described in detail. The purpose of the descriptions based largely upon on-site observations was to identify resource inputs that might produce additional costs beyond those for the regular school program. Where a school system had two or more programs of compensatory education, detailed description was limited to one or more selected programs. Attention was given particularly to the purposes of the programs, their target population and distinguishing characteristics, their resource inputs, and evidence of their effectiveness.

Findings

Neither the assumption that compensatory education is a separate program for which cost differentials can be determined nor the assumption that the cost differentials for compensatory education will not vary significantly among school systems appear to be very realistic for the 31 program descriptions. The findings may be summarized briefly as follows:

1. No two of the programs had exactly the same purposes. Most had two or more objectives often overlapping those of other school programs but so different from each other as to suggest probable requirement of different resource inputs for their accomplishment. Even programs with a similar broad purpose, such as development of reading skills, so differed in how they were formulated as to imply

varying resource inputs. In 24 of the 31, reading skills appeared as one of their implicit or explicit purposes.

2. No two programs served exactly the same target population. Twenty-two of them served Negroes and five served Spanish-speaking children from low income families, but age groupings, racial and ethnic mix, and bases of selection were never the same. The proportion of full time spent by a pupil in a particular program often is difficult to isolate except for after school, summer school, and pre school programs. Because there is a separate satellite study on pre school programs, the proportion of pre school programs studied deliberately was held below what it would be otherwise. Although 23 programs served elementary school children, four of these also included pre school children and another three, secondary school pupils. There were four pre school programs and four secondary school programs. The programs in some cases also tried to reach parents and/or teachers. The programs are classified below and compared with the selections of the American Institutes for Research in the Behavioral Sciences:

		Number of Programs	
School Level		*This Study*	*American Institutes' Studies*
I	Pre School	4	10
II	Pre School and Elementary	4	5
III	Elementary	16	10
IV	Elementary and Secondary	3	3
V	Secondary	4	4
	Total	31	32

By states the distribution for the same school levels is:

	Frequency by Level				
State	*I*	*II*	*III*	*IV*	*V*
California	1	1	3	-	-
Florida	1	1	-	2	-
Michigan	1	1	1	-	1
New York	1	1	4	-	2
Texas	-	-	3	-	1
Other States	-	-	5	1	-

No secondary school program was described in California; and no pre school program in Texas or in the four states used as a test group. Other factors in the selection of school systems account for these decisions.

3. The resource inputs usually were especially difficult to isolate because of overlapping purposes, target populations, and programs. Time spent in a program by personnel employed for two or more programs was hard to estimate for any one program. Capital outlays, supplies, and auxiliary services, for a particular program, often were lumped with those for other programs and often were served by two or more programs. The most reliable estimates secured were those for separate after school, summer school, and pre school programs.

The combinations of teachers, other staff, additional staff time, different staffing qualifications, additional pupils served, capital outlays, other materials, and auxiliary services were never identical and usually very dissimilar. All of the programs, however, did have an input of additional staffing in spite of the wide range with very little clustering around the midpoint. Other inputs were even more variable, with transportation important in a few instances.

4. It is unlikely that the 31 cases reveal the true extent of input variability that exists in compensatory education. It was not possible to obtain descriptive data on some of the most elaborate programs in large cities like Los Angeles and New York.

5. The data on evaluation generally are not sufficient by themselves to demonstrate program effectiveness or to permit defensible conclusions concerning resource inputs relative to program effectiveness. What the data really show is the varying proportion of resources allocated to evaluation.

6. Except for pre school, after school, and summer school programs, the data on full time target population and full time staff assigned to the programs generally are very rough estimates. The larger the school system the less confidence can be placed in them. Nevertheless, the estimates for the selected programs do support the possibility that there may be no single descriptive cost differential for compensatory education. It would appear possible that whatever cost differentials may exist will vary widely among school systems.

COST DIFFERENTIALS

Cost differentials were estimated according to procedures prescribed by the National Educational Finance Project which compared the estimated per pupil current expenditure for a compensatory education program with the estimated per pupil current expenditure for the regular school program. The attempt to estimate cost differentials for capital outlays and/or debt service had to be abandoned due to difficulties of estimating the data for previous years.

The estimates are for the school year 1968-1969; so the data do not answer the question of cost differentials varying over a period of time.

Regular school program refers to the program offered in grades one through twelve after eliminating four program areas—(1) early childhood programs (including kindergarten), (2) programs for exceptional children, (3) compensatory education, and (4) vocational and technical education. Pupil refers to a full time pupil equivalent on an average daily membership basis.

No cost accounting system was found that would yield current expenditure data for the regular school program as defined above. The data were for all programs or for certain programs for which separate accounts were required, e.g., for Federal funding. The same is true for average daily membership and generally reliance had to be placed upon fall enrollment data as a proxy for membership.

Limitations of Estimates

It is stressed that the cost differentials were projected from estimated data in all cases. If the errors in all estimated data move in the same direction, the margin of error could be very wide. The estimates probably are better for the selected programs and for total compensatory education and the regular school program in the smaller school systems than they are for total compensatory education and for the regular school program especially in the larger school systems.

These limitations arise from the many subjective decisions that had to be made by those supplying the estimates, the many persons who had to provide estimates in the larger places, and the many possibilities for those supplying estimates to depart from the definitions and instructions.

The fact that current expenditures other than teachers' salaries were estimated by allocating them according to the number of teachers could magnify possible errors. In only seven of the selected programs did teachers' salaries account for over half the current expenditures. Futhermore, the method might understate cost differentials in elementary schools and overstate them in secondary schools.

Except for the increased possibility of error, estimates are as good as accounting records for purposes of estimating cost differentials. Actual expenditures may minimize or exaggerate cost differentials for a variety of reasons: (1) differences in purposes and programs offered; (2) differences in the distribution of staff by length of service, preparation, and other characteristics affecting salaries payable; (3) differences in absenteeism, leaves of absence, terminations of service, and other conditions affecting salaries paid; (4) differences in the size of school systems, location, legal structure, and other characteristics causing differences in the prices paid for similar goods and services; (5) differences in managerial competence affecting what is spent for like purposes; and (6) recognition that actual charging of staff time, supplies, services, or other items to a program is not evidence that the item should have been so charged.

Findings

The cost differentials estimated directly from estimated pupil-teacher ratios with teachers' salaries held constant at the average for the school system probably are subject to least error in estimated data components. Yet, in three-fourths of the cases they might not be very predictive of the true cost differentials, because expenditures other than teachers' salaries were so much larger in proportion.

The cost differentials estimated on the foregoing basis for the selected programs revealed a wide range from .65 to 5.00 with much dispersion from the middle value of 1.42. The range in the averages for other compensatory education programs estimated in the same way in the same school systems was much wider, from .14 to 5.88, also with little clustering around the midpoint of 1.09.

The selected programs in California show the least spread in estimated cost differentials. The Michigan differentials reveal the second narrowest spread, but they are in a very different dimension from those in California. New York State shows the widest range. Texas resembles New York both in the range and central tendency. Florida and the test group have about the same kind of spread, but the central tendencies are very different. They fall between California and New York State.

The classification of estimated cost differentials for the 29 selected programs by states is given below:

State	*Number of Programs*	*Estimated Cost Differentials for Selected Programs*		
		Lowest	*Intervening*	*Highest*
California	5	.78	.81; 1.20; 1.25	1.41
Florida	4	.65	.91; 1.03	2.54
Michigan	4	2.48	2.96; 4.52	4.91
New York	7	.88	1.15; 1.24; 1.40; 1.96; 2.10	5.00
Texas	4	.84	1.44; 1.44	4.96
Test Group	5	.85	.98; 2.99; 3.55	3.71
Total	29	.65		5.00

Substitution of actual salaries paid in the programs for average salaries had little effect upon the estimated cost differentials. Using other estimates of cost differentials, classifying the data by states, or classifying the data by program types did not change the basic finding of much variability in the estimated cost differentials.

The cost differentials for the pre school, after school, and summer school programs observed are misleading. In the programs described all of the costs were additional.

Conclusions

These findings offer little support for the assumption that cost differentials for compensatory education will not vary significantly among school systems. It is possible that each state might have different patterns of cost differentials for compensatory education. It is possible that no state has any one differential for such programs that would be applicable to most school systems.

The estimates of cost differentials possess too many limitations to provide a solid basis for estimating or projecting costs of compensatory education for the states or the nation. Even if this were not so, there are too many uncertainties about the representativeness of the sample to attempt such estimates.

The fact that all programs described had an input of additional staffing beyond what is provided in the regular school program is indicative of an additional cost. If this finding holds true generally and if it is ignored in Federal and state plans for distributing funds to school systems and local plans for allocating funds to schools, either compensatory education or other educational programs will suffer. Furthermore, failure to take this fact into account in Federal and state laws could result in over estimation of the fiscal capacity of states and school systems having above average compensatory education needs.

The attempt to estimate cost differentials for compensatory education may not be necessary to deal with the problem. Purpose and program overlaps create very difficult problems of accounting for pupils, staff, and other program inputs. It would appear that other program areas identified in the Project might have encountered similar problems. Hence, it might be well in some states at least to lump all of these special needs into a single correction. This approach is worthy of consideration.

If the programs described are typical, compensatory education generally is not a separate school program appropriate for the cost differential approach to need determination. Even in the case of pre school, after school, and summer school type programs where there is no overlapping with other programs, cost differentials do not reveal the true extent of the additional costs.

FOOTNOTES

1. A summary of National Educational Finance Project Special Study No. 3 by Arvid J. Burke, James A. Kelly, and Walter I. Garms.
2. Referring to the definition of compensatory education.
3. James A. Kelly, "Resource Allocation and Educational Need." *Education and Urban Society*, Volume 2, Number 3, (May, 1970), p. 261.
4. See: Walter I. Garms and Mark C. Smith, *Development of a Measure of Educational Need and Its Use in a State School Support Formula.* Albany: New York State Educational Conference Board, 1969, p. 5ff.
5. The authors acknowledge the assistance of Dr. Anthony M. Cresswell, who conducted the statistical analyses for the five states.
6. These estimates are drawn from: Bureau of the Census, "Current Population Estimates," Series p-25, No. 381. Washington: U. S. Government Printing Office, 1967.
7. *A Study of Selected Exemplary Programs for the Education of the Disadvantaged* (1968) and *A Study of Further Selected Exemplary Programs for the Education of Disadvantaged Children* (1969). American Institutes for Research in the Behavioral Sciences.

CHAPTER 4

*Financing Vocational Education in Public Schools**

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THE IMAGE OF VOCATIONAL EDUCATION

While increasing funds are becoming available to support the training of both young people and adults in vital occupations, many people are reluctant to enroll in vocational education programs. It is commonly believed that the only students who enroll in occupational education programs are those who cannot survive in the highly competitive world of college and university training. It appears, therefore, that if growing numbers of students are to be trained to meet the manpower needs of our technological society, the people at large, as well as many educators, will first have to change their view of the nature of vocational education.

Historically, Americans have held vocational education in low esteem. Most Americans who emigrated from Europe and Asia felt that schooling would enable their children to improve their social position. They wanted them to enter the professions, or to become "white collar" workers, something that had not been possible in their native countries. Many of these "blue collar" immigrants conceived of vocational education as being designed for "blue collar" workers only, and they developed the attitude that vocational education was for other children, not their own.

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* Note: This chapter is a summary based upon work done by the authors and research associates Daniel G. Aldrich III, Paul S. Gilbert, Marvin E. Heinsohn, and Leonard R. Shymoniak.

The disparagement of vocational education was reinforced by the way it had been defined in the past, and the narrow goals that had been established for various programs. Even today, despite such relevant, contemporary definitions of vocational education as, "the successful transmission of man's increasing knowledge and ability to control and utilize the forces and materials of an industrial culture,"[1] a definition that clearly implies academic proficiency, the general public views vocational-technical education far more narrowly.

Several plain facts may be cited as reasons for this misconception. First, the definition of vocational education was restricted by the limited amount of Federal funds available. More liberal funding would have led to broader definitions. Second, as Federal monies were distributed among all the states, limitations had to be set on their use. Third, narrow definitions made it easier for both legislators and educators to focus on areas with which the nation was especially concerned.

A brief look at some definitions of vocational education will reveal that over the last fifty years, although occupational training programs have broadened to include the teaching of more and more skills, the image of vocational education in the public mind has changed very little.

In 1917, the Smith-Hughes Act, one of the first implementations of Federal aid to schools below the college level, and amendments to this Act (George-Reed Act of 1929, George-Ellzey Act of 1934, George-Deen Act of 1936, and George-Barden Act of 1946) defined vocational education so as to make it distinct from general education. Under these acts, vocational education meant courses of instruction to develop skills for specific occupations exclusively. In its 1919 State Plan for Vocational Education, the California State Board of Education wrote: "Instruction may be given only in such subjects as will increase skill or knowledge in the occupation in which the worker is engaged as his daily employment, or as will lead to promotion of advancement in that work."[2] Other states had similar restrictions in their plans for those classes which legitimately could be funded for occupational education. Thus, general typing could not be federally supported because it did not train students for one specific occupation. However, an advanced typing course could be financed from vocational funds, as it trained students to improve their skills in specific vocations.

In order to qualify for Federal funds, even supplemental courses had to be related to specific occupations and to the skills required for success in those occupations. For example, California's State Plan specified as follows, regarding occupations in trades and industries: "In a course such as printing the most important of the supplemental subjects is English. Unless it can be demonstrated that the usual high school courses in English do not meet the needs of the printer, this subject will not be given special aid."[3]

The social and economic factors which affected conditions in the United States between 1920 and 1960 changed the function of vocational education. As Ginzberg said, "Technology aside, significant changes took place as a result of the Depression, the New Deal, World War II, the advances in the economy, and the demographic and cultural changes which accompanied these political and economic shifts."[4] Vocational education objectives were affected by program extensions to serve more classes of people while, at the same time, broader categories of offerings were provided. The changing aspects of industry called for skilled workers with broadened understanding. Some states, such as Oregon, for example, began to make the conventional programs more flexible so they could develop understandings relevant to clusters of fields. Further, the rapid obsolescence of occupational skills increased the need for continuous education and retraining, and so both general and vocational education had to provide such programs and instill in students the desire to continue their learning. This latter necessity led to the broadening of vocational education and brought its goals closer to those of general education.

In 1960, vocational education had to be broadened significantly because of population movements; economic developments in agriculture, mining, manufacturing, and the service occupations; developments in education; and changes in technology which caused jobs to vanish as well as to emerge. The new worker needed more scientific knowledge. Technological development led to the replacement of the routine production worker, who had done monotonous work on assembly lines, by complex machines. In response to the workers' need of more knowledge, the definition of vocational education was broadened further. Yet, despite these basic changes in its structure, its image stayed the same as it had been in the past.

The Vocational Education Acts of 1963 and 1968 authorized substantial increases in Federal funds by broadening the purpose of various programs. The thinking behind these changes is readily apparent in the definition of vocational education in a report of the Advisory Council to the Subcommittee on Education of the Committee on Labor and Public Welfare of the United States Senate, issued in March, 1968. In its report, the Council suggested that the objectives of vocational education should include development of the individual, as well as meeting the needs of the labor market. Vocational education, therefore, said the Council, is related to those aspects of educational experience which help a person to (1) discover his talents, (2) relate his talents to the world of work, (3) choose an occupation, (4) refine his talents, and (5) use his talents successfully in employment.

Stated general goals in many state plans for vocational education still emphasize specific occupational skills. For example, in Utah, one major goal is "to develop the skills necessary to perform effectively in one's chosen occupation." New York's State Plan reflects the original definition in its goal, "to assist in the creation of a skilled labor force, adequate to meet manpower needs at the national, state, and local levels." In California, one of the state goals is, "to prepare individuals for enrollment in advanced vocational and technical education programs." New York again reflects this old definition in the goal, "to develop skills needed for success in specific occupations and groups of occupations, including entry-level skills for those seeking immediate employment."

Other state plans also echo this earlier definition of vocational education in one or more of their stated goals. However, most objectives today rest upon much broader definitions than the teaching of skills for specific occupations. One of the goals stated in Utah's Plan is as follows: "To develop within the individual the personal-social traits which will help him in relating to other people, both on and off the job, and in making him a good citizen and one who can enjoy and appreciate the finer things in life." One of Oregon's broad goals is: "To provide all with ample opportunities to explore the knowledge, skills, technical requirements, working conditions, and political and social environments and responsibilities of each of the career fields that are open to them." New York reflects this more comprehensive definition in its goal, "to assist in the development of skills in personal, social, and civic relationships needed for full participation in society as a worker, family member and citizen." Washington sets forth two goals which, at their core, reflect this new attitude. One emphasizes the need "to provide programs, services, and activities which assist each individual to recognize and achieve his highest potential." Another stipulates that vocational education programs should "provide services and activities which will insure that each individual student acquires a basic understanding of our economic structure with specific emphasis on how the system affects him as an individual."

All of these contemporary goals have one striking similarity: they are very close to the goals that all states have established for their general education programs. Assisting toward the blending of the goals of general and vocational education was the undeniable fact that states were emphasizing academic achievement in college preparatory courses as the major purpose of their high school programs. Chase contended that American education was preoccupied with the 20 percent of this country's youth who completed a college education and ignored the 80 percent who were "learning to be unemployable."[5] In order to meet the needs of this overwhelming majority of students, vocational education had to be broadened significantly. New York, in its 1971 State Plan, acknowledges the broader purpose of vocational education when it specifies that "a common purpose of occupational education and education in general must be a development of students' ability to evaluate their own aptitudes, interests, and abilities in relation to the multitude of occupational opportunities in the modern economy, and to make appropriate educational and occupational decisions on the basis of this self-evaluation." The United States Department of Health, Education and Welfare sees the relationship between vocational and general education in the following light:

> Liberal education and vocational education are both essential aspects of the problem of preparing an individual for living and for earning a living; they cannot be thought of as hostile or mutually exclusive enterprises. An educational program which recognizes value in both liberal education and vocational education is most desirable for the attainment of future individual and national goals.[6]

In 1970, state education leaders believe that the teaching of trade skills should not be the only concern of vocational education, and yet the public image of vocational education remains what it was in 1917. A major challenge facing education in every state today is the necessity to reshape the image of vocational education, to bring about its acceptance as an integral part of every student's total education.

Ironically, in every major effort to formulate goals for modern secondary education in the United States, vocational education has been awarded a prominent place. In 1917, "vocational competence" was included among the seven cardinal principles of secondary education. During the 1950's, the need for a "salable skill" was among the ten imperative needs of youth. Yet despite enthusiastic declarations, enrollments in vocational education programs in public schools remain relatively low. These enrollments will not increase, even in those states which are projecting enrollment gains five years hence, unless the image of vocational education improves, and vocational education comes to be accepted as an essential part of the total education of all American youth.

FEDERAL CONTRIBUTIONS TO VOCATIONAL EDUCATION

Federal activity in vocational education has a long history, but its most significant legislation has been enacted since 1914. Federal legislation before 1914 included the First and Second Morrill Acts, the Hatch Act, and the State Marine School Act, which dealt specifically with the training of college students in vocations such as agriculture, the mechanical arts, and seafaring. Their major contribution was not to establish the purposes and procedures for financing vocational education which have influenced later legislation — the Smith-Hughes Act deserves this honor, perhaps — but rather, their real contribution was to establish a precedent for the Federal government's participation in the area of education, particularly vocational education. These acts that came before 1914 facilitated the passage of numerous acts on vocational education as the twentieth century progressed, and helped to bring us to our present position.

The Smith-Lever Act (1914), also called the Agricultural Extension Act, provided for cooperative extension work in agriculture and home economics. Instruction and practical demonstration in agriculture and home economics was to be given to persons not attending or residents in colleges, with information being imparted through field demonstration, publications, and related approaches.[7] Appropriations were to be made on an annual basis with a Federal dollar to match each state dollar spent for extension training. Through this legislation the land-grant colleges were liberalized and democratized by their becoming involved in demonstration and project work at the farm.[8] In previous legislation Federal monies could be spent only for professional training for a degree in technical subjects. Land-grant colleges now began to train the farmer and family on the home acres.

Vocational education coverage was extended further through the Smith-Hughes Act (1917), also called the National Vocational Education Act. Federal funds could be used to support vocational and home economics training for high school students with funds being appropriated for the following purposes: (1) salaries of teachers, supervisors, and directors of agricultural subjects; (2) salaries of teachers of trades, home economics, and industrial subjects; (3) preparation of teacher-trainees in agriculture, home economics, and trades and industries; (4) study of problems connected with these areas of teaching; and (5) administration of the law.

The National Vocational Education Act established the Federal Board for Vocational Education which was composed of the Postmaster General, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce and the Secretary of Labor. Each participating state was to submit a state plan on an annual basis, after 1922 the Federal Board secured a change with the states then submitting their plans for a five-year period. This legislation made two important contributions to Federal and state cooperation. First, Federal aid was extended to schools below the college level; and second, Federal funds were available for teacher salaries by using the principle of matching funds.

The Federal Board for Vocational Education continued to exist until 1946 when it was abolished, subject to an executive order issued by President Truman; however, its powers had already been reduced by executive orders issued by Presidents Hoover and Roosevelt.

Further development of vocational education was achieved through the enactment of the George-Reed Act (1929), the George-Ellzey Act (1934), and the George-Deen Act (1936). Under this latter act, funds were appropriated for salaries and necessary travel expenses of teachers, supervisors, and directors of teacher training in distributive occupational subjects.

The George-Deen Act (1936) was amended by the George-Barden Act (1946) with the original legislation being changed so that only one appropriation was made for each of the four program fields and no separate allocation for teacher training. Funds could also be used for maintaining administration and supervision, which was not acceptable under previous legislation. Coverage also included purchase or rental of equipment and supplies for vocational instruction.

Under the provisions of the Manpower Development and Training Act (1962) vocational training was extended to include the unemployed and those whose skills had become obsolete because of shifts in market demands and other changes in the structure of the economy. The purpose of this legislation was "to require the Federal government to appraise the manpower requirements and resources of the nation, and to develop and apply the information and methods needed to deal with the problems of unemployment resulting from automation and technological changes and other types of persistent unemployment."[9] During the first two years of the program Federal funds were to pay 100 percent of the cost, but the states were to pay on a matching basis during the third year.

The Vocational Education Act (1963) was enacted to provide for the manpower needs of the Sixties. During the 1960's, researchers predicted that 13.5 million new jobs would open up and about an equal number of workers would be needed to replace those who retired or died.[10] These people needed to be prepared through education and training to carry out their job duties and responsibilities. It was estimated that there were 26 million new workers and 4 million unemployed and under-employed workers who needed some appropriate kind of vocational training.[11]

Provisions of this legislation recognized four categories of eligible persons: (1) those who attended high school; (2) those who had completed or left high school but were free to study full time in preparing for a job; (3) those who had already entered the labor market but needed training or retraining, either to hold their jobs or to get ahead; and (4) those who had handicaps — academic or socioeconomic — that prevented them from succeeding in the regular vocational education program.

Ninety percent of the funds were appropriated among the states on the basis of a computation that took into account two factors: (1) the number of persons in each of the age groups eligible for vocational education, and (2) the per capita income. The states, beginning in 1965, were required to match, in state or local funds, all Federal funds they had allocated in their plans for each of the purposes as set forth under the Act. Each state was also required to use a certain percentage of its total allotment either for construction of area vocational schools, or for vocational education for persons who had graduated from high school or who had dropped out before graduation and were available for full-time study in preparing for a job.

The Vocational Education Act accomplished four revisions in Federally supported vocational education programs: (1) Vocational programs were expanded in terms of facilities, staffs, and classroom space; (2) curriculum was updated to meet the newer job needs in such fields as computer programming and other highly technical occupations; (3) the whole concept of vocational education was upgraded by including more types of students in the programs; and (4) new pioneer programs were developed, such as vocational boarding schools and work-study programs, which provided subsistence pay and part-time work while students attended school.

Several amendments to the Vocational Education Act (1963) were enacted in 1968. The basic intent of the original Act was not changed and the coverage included the same groups of students. The allotment formula remained the same, but specified amounts were to be used for programs for the disadvantaged, post-secondary vocational education, and the handicapped. The inclusion of the disadvantaged and the handicapped perhaps constitutes the major contribution of these amendments. Identification of these students is a formidable problem, but a major attempt has been initiated to prepare thse students adequately for the world of work.

The provisions of the amendments were divided among four titles. Title I described the general provisions of the legislation and in addition authorized (1) research and training in vocational education, (2) exemplary programs and projects beyond those of the 1963 Vocational Act, (3) residential vocational education schools, (4) consumer and homemaking education, (5) cooperative vocational education programs (emphasizing school-employer arrangements), (6) work-study programs, and (7) curriculum development in vocational and technical education.

Under Title II the Education Professions Development Act of 1965 was amended to include a specific section pertaining to vocational education personnel. Support could be provided for vocational educators to engage in full-time advanced study for a period not to exceed three years. Provisions were also made for support of exchange programs, institutes, and in-service education for vocational education teachers, supervisors, coordinators, and administrators.

Title III contained miscellaneous provisions relating to collection and dissemination, programs for training teachers of the handicapped, and studies relating to program consolidation, Job Corps, and Head Start. Title IV was a repealer for all previous vocational education acts except the Smith-Hughes Act; however, appropriations relating to that program were included in those for the Vocational Education Amendments of 1968.

From what has occurred in the half century since the passage of the Smith-Lever Act, it can be predicted that additional legislation for vocational education will be enacted. The form this legislation will take is more difficult to anticipate. However, one can be almost certain that future legislation for vocational education will continue to provide funds on a matching basis, preserving the traditional partnership between the Federal and state governments, although the matching on a traditional 50-50 basis will become less common. Also, the Federal appropriations among the states probably will begin to take into account additional factors, other than population and per capita income. Hopefully, future legislation will continue to meet the needs of our changing and growing economy and will attempt, out of necessity, to upgrade the whole concept of vocational education in our society. Finally, future legislation will help vocational education programs expand so that not only will more students be enrolled in vocational education, but also more of the needs of each student will be met. This will be especially true with those students handicapped because of physical disabilities or as a result of socio-economic conditions.

PROCEDURES FOR DETERMINING THE COST OF VOCATIONAL EDUCATION

Determining actual amounts expended for vocational education is very difficult because of the lack of uniformity among states in program accounting methods. In this section, the program accounting problem is analyzed and procedures are suggested for determining the cost of vocational education courses and programs. However, in this study, data based strictly upon this method were not available and it was necessary to base projected costs of vocational education upon estimates derived from other studies (see section on Cost Projection).

In developing a procedure for determining the cost of an instructional program, there are a number of decisions which must be made regarding what expenses to include and how to classify them.

First, however, a choice must be made between different ways of treating capital expenditures. In public school accounting, the concept of depreciation is seldom used except for the purpose of determining the insurable value of buildings and equipment. In some instances, state support for pupil transportation has included an amount for the depreciation of school buses.

The practice of permitting annual payments to a school district for depreciation of school buses is based upon the assumption that the school district will accumulate a replacement reserve which will be available when the bus is to be replaced. Experience indicates, however, that such reserves become the target of demands for reductions in the school tax rate, or for increases in teachers' salaries. Consequently, a reserve fund is seldom retained for its intended purpose. For this reason, it is usually more satisfactory for the state to contribute toward the purchase of transportation equipment during the year the school district actually makes a purchase and not annually on a depreciation basis.

Similarly, if the state is to contribute to the purchase of instructional equipment for vocational education, the contribution should be made when the equipment is purchased — not as annual allowances for depreciation during the life of the equipment. Therefore, the cost of vocational education developed in this study excludes annual depreciation allowances. Only current expenditures, including repair and replacement of equipment, are calculated in the annual cost per student for vocational education.

To determine the cost of vocational education, it is necessary to classify all current public school expenditures into three categories:

1. Direct costs of instructional programs
2. Indirect costs of instructional programs
3. Costs not charged to instructional programs

Under the accounting system recommended for public schools by the United States Office of Education, all current expenses are divided into nine major classifications. One of the nine, "Instruction," usually accounts for over two-thirds of all current expenditures, and another, "Administration," for three to four percent of the current budget. Program cost accounting would be simple and precise if all the expenditures classified as "Instruction" could be charged as direct costs to the various instructional programs and all of the expenditures for "Administration" could be prorated among the programs as indirect costs. Unfortunately, this procedure cannot be used at present because "Instruction" includes some indirect costs and "Administration" includes some direct costs.

The public school accounting guide published by the United States Office of Education has several subheadings under the category of "Instruction." These include salaries for teachers, supervisors, and other instructional personnel; expenditures for textbooks and teaching supplies; and other expenditures for instruction which are regarded as direct costs of instructional programs. However, salaries of principals, their secretarial and clerical staff, and other instructional staff (librarians, guidance, and psychological personnel), as well as most costs for school libraries and audiovisual materials, cannot be identified with any one instructional program. For this reason, it is not possible to charge these items as direct costs. Instead, they are charged as indirect costs and prorated among the various instructional programs maintained by the institution.

Similarly, most of the expenditures classified as "Administration," such as the superintendent's salary and the cost of the office of business administration, are clearly indirect costs and should be prorated among all the instructional programs. However, some administrative services, such as salaries paid to a director or assistant superintendent of vocational education, are associated with a single instructional program. Should these salaries be charged as a direct cost of vocational education, or classified with the superintendent's salary under "Administration," and prorated as direct costs?

If the director of vocational education performs duties similar to those performed by other members of the superintendent's staff, a persuasive case can be made for charging his salary to general administration, prorating it with the other costs of "Administration." However, the director of vocational education or special education usually performs additional administrative services. These programs often require special reports to qualify for categorical aids. At the end of the year, additional reports must be prepared describing and evaluating the program. Moreover, these programs often require large amounts of special equipment procurement and maintenance. As a result, administrative costs of these programs are relatively large. This fact would be obscured if all administrative costs were consolidated and then prorated as indirect costs.

For these reasons, expenditures for administration in this study are divided into two categories:

1. General Administration
2. Special Program Administration

"General Administration" expenditures are classified as indirect costs and prorated among all instructional programs. "Special Program Administration" costs are charged as a direct program cost and include the following:

1. Program Area Director's Salary

2. Director's Secretarial Salaries

3. Program Area Assistant Director's Salary

4. Director's Travel and Office Supplies

Hopefully, when the U.S. Office of Education issues a revised accounting guide for public schools, the broad category entitled "Instruction" will be redefined to include all costs of instructional programs. If the existing expenditure category called "Instruction" should be replaced by a similar but slightly different category called "Direct Costs of Instructional Programs," program accounting in public schools would be facilitated. The revised category would include special program administration as well as repair and replacement of instructional equipment.

Another class of expenditures, pupil transportation, raises questions:

1. Should the cost of transportation to and from school be classified as an indirect cost of instructional programs or as a "student service" not charged to the instructional programs?

2. Should special transportation costs, associated exclusively with an instructional program, be charged as a direct cost of that program?

To answer these questions, one must ascertain whether a state provides aid separately for pupil transportation. If separate aid is provided, classifying pupil transportation costs as an indirect cost of a categorically-aided instructional program would lead to duplicate reimbursements for transportation. Since most states grant funds to school districts for pupil transportation, based upon costs incurred for providing such a service, in this study pupil transportation is regarded as a "Pupil Service" and not charged to instructional programs.

The following expenditure accounts are also classified as "Pupil Service" or "Community Service" and are not charged to instructional programs: (1) Attendance and Health Services, (2) Food Services and Student-Body Activities, and (3) Community Services.

The expenditure account "Maintenance of Plant" is subdivided into four categories: (1) Salaries, (2) Contracted Services, (3) Replacements of Equipment and (4) Other Expenses. "Salaries," "Contracted Services," and "Other Expenses," are classified as indirect costs of instructional programs. However, expenditures for replacing instructional equipment usually can be identified with separate instructional programs. The cost of replacing non instructional equipnent, however, is classified as an indirect cost.

The accounts "Plant Operation" and "Fixed Charges," like the principals' salaries, cannot be identified with any one instructional program area. For this reason, these accounts are also classified as indirect costs of instructional programs. Ideally, fringe benefits for school employees, currently included under "Fixed Charges," should be charged with salaries, but this is seldom possible under present reporting procedures.

Using the above procedure, it is possible to classify all current expenditures of typical public secondary schools into three categories:

1. Direct costs of instructional programs

2. Indirect costs of instructional programs

3. Costs of student services not charged to instructional programs

The items which are included as direct costs of instructional programs are shown in Exhibit 4-1. It will be noted that alternate ways are suggested to obtain the amount for teachers' salaries. For some purposes, the actual salaries paid to vocational education teachers are used; for other purposes, the number of vocational education teachers employed is multiplied by the average salary paid secondary school teachers. The latter method is especially important when the indirect costs are computed as a percent of the direct costs.

An estimated allocation of all public secondary school current expenditures between direct and indirect costs of instructional programs is shown in Exhibit 4-2. It will be noted that approximately 10 percent of the cost of "Administration," 90 percent of the cost of "Instruction," and 10 percent of the cost of "Plant Maintenance" were classified as direct costs of instructional programs. On the other hand, "Attendance and Health Services," "Pupil Transportation," "Food Services," and "Student-Body Activities" were all regarded as "Pupil Services" and not included as an indirect cost of instructional programs. On this basis, the indirect cost of instructional programs in most high schools varies from approximately 45 percent to 60 percent of the direct costs.

EXHIBIT 4-1

CURRENT EXPENDITURE ITEMS INCLUDED IN THE COST OF INSTRUCTIONAL PROGRAMS

I. Direct Costs of Instructional Program

A. Program Administration
   1. Program Director's Salary ______
   2. Assistants' Salaries ______
   3. Director's Secretarial Salaries ______
   4. Travel & Office Supplies ______
(A)______

B. Instruction
   1. Program Supervisor's Salaries ______
   2. Program Teachers' Salaries[a] ______
   3. Other Salaries of Instruction for Program ______
   4. Textbooks for Program ______
   5. Teaching Supplies for Program ______
   6. Other Expenses for Program ______
(B)______

C. Maintenance of Plant
   1. Repair and Replacement of Instructional Equipment for Program (C)______

D. Total Direct Costs of Program (A+B+C) (D)______

II. Indirect Costs (—%xD)[b] ______

III. Total Program Costs (D + II) ______

[a] For annual reports, insert actual salaries paid to vocational education teachers; for computing indirect costs and for long-term planning purposes, substitute an amount based upon applicable salary averages.

[b] The percent used here will vary from state to state based upon actual expenditures for high schools and junior colleges.

EXHIBIT 4-2

ESTIMATED ALLOCATION OF PUBLIC SECONDARY SCHOOL CURRENT EXPENDITURES BETWEEN DIRECT AND INDIRECT COSTS OF INSTRUCTIONAL PROGRAMS

Expenditure Category	*Direct Cost*	*Indirect Cost*
Administration	10%	90%
Instruction	90%	10%
Attendance & Health Services*	0%	0%
Pupil Transportation Services*	0%	0%
Operation of Plant	0%	100%
Maintenance of Plant	10%	90%
Fixed Charges	0%	100%
Food Services & Student-Body Activities*	0%	0%
Community Services*	0%	0%
TOTAL CURRENT EXPENSES		

*None of these expenditures are charged to the cost of instructional programs; instead, they are charged to "Pupil Services" or to "Community Services."

Next, it is necessary to clarify the distinctions between (1) incremental cost, (2) excess cost, and (3) total cost. These distinctions are relevant to plans for financing vocational education. For example, the state may wish to contribute to local educational agencies each year for the support of vocational education amounts equal to:

1. The *increased* current expenditures (or incremental cost) incurred in establishing and maintaining an approved vocational education program.

2. The *difference* (or excess cost) between the cost per student enrolled in vocational education courses and the corresponding cost per student enrolled in "general education" courses.

3. The *total* current cost of operating an approved vocational education program.

In this first case, the state reimbursement is intended to contribute an amount to the school equal to the amount it would save if the vocational education program were eliminated. Under this policy, the state seeks to be strictly neutral. The vocational education curriculum is made available at no additional cost to the school district, but there is no financial advantage to the school which chooses to establish a vocational education program. Categorical aid is limited to the actual additional costs incurred.

The excess cost concept mentioned in (2) above is closely related to incremental cost, but it differs primarily in the way indirect costs are apportioned. In the incremental cost approach, only additional indirect costs which are actually incurred are included. In the excess cost approach, all indirect costs are apportioned among all programs and a proportionate share of indirect costs is charged to vocational education courses, even though no identifiable additional indirect costs have been incurred.

The excess cost is usually determined on a per student basis. After the total cost of vocational courses has been determined, the amount is divided by the full-time equivalent number of students served by the program. The excess cost is then determined by deducting the corresponding cost-per-student enrolled in "general education" courses from the cost-per-student enrolled in vocational courses.

For example, if the cost of a vocational education course is $1200 per student and the cost-per-student enrolled in general education courses is $800, the excess cost is $400 per student.

Determination of the excess cost of vocational education requires a determination of the total current cost of vocational education, the number of students served (on a full-time equivalent basis) by the vocational education program, and the corresponding cost per student of general education courses.

In the foregoing discussion of excess costs, the definition used is that which the U.S. Office of Education advocates: ". . . in excess of the cost which may be normally attributed to the cost of education in a local educational agency." However, there are a number of other ways in which excess cost is defined. In California, the excess cost of vocational education is obtained by comparing the cost of vocational education students in a local educational agency to the amount of reimbursement that agency would receive through the State Foundation Program. In other states, the excess cost is determined by comparing the cost of vocational education students in a local educational agency with the statewide average for all high school students.

PROJECTIONS OF VOCATIONAL EDUCATIONAL ENROLLMENTS FOR 1980

In theory, the projection of vocational education needs a decade hence should present little difficulty, assuming the availability at state and national levels of certain data. In practice, the assumption cannot always be made with confidence. However, the task is facilitated if insight can be gained into the following aspects of anticipated educational development over the period for which the projections are to be made: (1) policy changes made by Federal, state, and local governments, which affect the scope, quality, extent, and image of various programs in the public school curriculum; (2) population growth, composition, and mobility at the state and interstate level; and (3) an estimate of the percent of the school-age population enrolled in public and non-public schools.

Accurate prediction of policy changes over the coming decade is particularly difficult and largely beyond the control of anyone attempting to project program needs. In the area of vocational education, the problem was made somewhat more manageable for this study through the efforts of the various state divisions of vocational education. In their annual state plans, each state had attempted to identify and specify goals and objectives for the next five years. Objectives specified in the 1970-71 plans were quantified in terms of projected enrollments for 1975, and adapted to the method of projection used in this report. The simple knowledge of state goals for 1975, however, did not eliminate all the obstacles to making reasonable projections. As can be readily seen, there was no real assurance that state goals were not over-optimistic. Moreover, little evidence was apparent for support of judgments as to the degree to which expressed goals were realistic in terms of planning, or the extent to which the objectives would be realized by 1975. Nevertheless, these state goals served as the best indicators of future trends in the United States, and considerable use was made of them in estimating vocational education program needs in 1980.

The second problem, that of obtaining reliable demographic estimates, state by state, was complicated by the fact that the 1970 Census Bureau statistics were not available at the time of the study. Since population estimates made prior to this study were based mainly on the 1960 census and trend data as old as those of 1956, some question was raised about the accuracy of the estimates. The problem was accommodated to a degree by means of an adjustment factor.[12]

Difficulties arose also in gaining insight into the third aspect of development, the estimating of school enrollment. According to NEA reports, the percent of the school-age population enrolled in public and non-public schools varies greatly among states, and has tended to increase, generally speaking, at a slower rate in recent years than that of a decade ago. As this percent figure is related in varying measure to such factors as state kindergarten policies, socio-economic, and environmental conditions affecting early school dropout incidence, and attendance in non-public schools, difficulty was experienced in determining how to predict this parameter for the separate states in 1980. As the 1969 NEA school statistics report provided the most up-to-date source of data useful for estimating this parameter, it was assumed to be reasonably sound and was the basis for this study's projection of school enrollments over the next ten years.

The procedure for estimating enrollments in secondary, post-secondary, adult, and special needs vocational education programs, state by state, was a two-stage calculation. The first stage involved projecting vocational education enrollments and comparing these projections with those made by the individual states for the same year. Such a comparison helped to determine an adjustment factor which, when applied, eliminated discrepancies in the stage two calculations — the projection of national education enrollments in 1980. The underlying assumption here was that projections by state divisions of vocational education were more realistic than projections based on Census Bureau statistics only. It could be assumed that state departments of education were directly or indirectly concerned with the problem of predicting enrollments, and that their staffs had access to local sources of information not so readily available to outside agencies. However, Census Bureau data could not be overlooked because they served as the major source for projecting school enrollments for 1980. Even though the census data contain some discrepancies, they nonetheless provide the best basis on which to develop a state by state projection of secondary school enrollment for 1980.

The second stage of the calculation involved the projection of vocational education needs for 1980. Except for the addition of the adjustment factor explained above, the procedure used to project enrollments for 1975 was the same as that used for the 1980 calculation.

Table 4-1 summarizes estimated total vocational education enrollment for four indicated years, including 1975 and 1980 estimates derived in this study. This table indicates that the total vocational education enrollment for all states in 1980 will be 14,162,300, which is broken down among the various grade levels as follows: secondary — 6,277,000; post-secondary — 1,976,500; adult — 4,191,400; and special needs — 1,717,400.

TABLE 4-1

VOCATIONAL EDUCATION ENROLLMENT TOTALS FOR ALL STATES BY LEVEL FOR INDICATED YEARS

Grade Level (1)	*FY 1966* (2)	*FY 1969* (3)	*FY 1975* (4)	*FY 1980* (5)
TOTAL	6,070,059	7,979,366	12,791,500	14,162,300
Secondary	3,048,248	4,079,395	5,837,700	6,277,000
Post-Secondary	442,097	706,085	1,792,000	1,976,500
Adult	2,530,712	3,050,466	3,575,900	4,191,400
Special Needs	49,002	143,420	1,585,900	1,717,400

Sources: Columns 2 and 3: "Summary Data, Vocational Education," (for fiscal years 1966 and 1969), U.S. Department of Health, Education and Welfare. Column 4: Taken from annual state plans for vocational education, 1970-71, Part II, Section 5.0-6.0. Column 5: Summary of by-state enrollment projections made in this study.

An analysis of state goals in vocational education for 1975 indicated some change in overall emphasis of program offerings at various grade levels. Table 4-2, indicates that roughly 51 percent of the total vocational education programs were offered during FY 1969 at the secondary level. From the same table, it is readily observed that this figure will be reduced by approximately 5 percent for 1975 and 1980 to a level of 45 percent. In FY 1969, special needs programs amounted to nearly 2 percent of the total vocational education program. In 1975, states anticipate that this figure will increase to more than 12 percent of the total vocational education programs. Similarly, states anticipate an increase in post-secondary and a decrease in adult programs, as compared with total vocational education offerings for FY 1969.

It must be recognized, however, that actual enrollments in secondary and adult level programs will not decrease. Undoubtedly, the enrollments in both of these areas will continue to increase at a steady rate. Since the rate of increase of post-secondary and special needs programs is more rapid than that in secondary and adult programs, the latter appear to decrease relatively. The rapid rate of increase in special needs programs can be attributed to the mandated provisions of the Vocational Education Amendments of 1968. Under the provisions of this Act, states are required to spend at least 25 percent of Part B Federal funds for disadvantaged and handicapped students. Similarly, the relative decrease in the rate of growth in adult programs is due to the transfer of the adult count to the area of post-secondary education. As the post-secondary programs are expanded, they will tend to absorb more and more of the adult enrollment.

TABLE 4-2

PERCENT ENROLLMENT TOTALS FOR ALL STATES BY LEVEL FOR INDICATED YEARS

Grade Level (1)	*FY 1966 (2)*	*FY 1969 (3)*	*FY 1975 (4)*	*FY 1980 (5)*
TOTAL	100.0	100.0	100.0	100.0
Secondary	50.2	51.2	45.6	44.3
Post-Secondary	7.3	8.8	14.0	14.0
Adult	41.7	38.2	28.0	29.6
Special Needs	0.8	1.8	12.4	12.1

Source: Percentages calculated from Table 4-1.

It is difficult to ascertain the extent to which state goals for vocational education for 1975 are realistic. Out of a total U.S. secondary fall enrollment of 17,579,131 for 1969, the number of secondary students enrolled in vocational education was 4,079,395, or approximately 23 percent. In 1970, the average state anticipates that approximately 39 percent of total secondary enrollments will participate in some secondary vocational education program. This indicates almost a doubling of enrollment in vocational education in a period of six years.

The capacity of states to extend the scope of vocational education can be implied from past average yearly rate increases in vocational education. Table 4-3 provides such information by illustrating the average percent increase per year in total vocational education enrollments for all states by grade level to 1966-69, 1969-75, and 1975-80. The figures for 1969-75 are based on state anticipated increases, while those for 1975-80 represent estimates based on projections made in this study. It is considered that the average annual rate of increase in total vocational education enrollments between 1966-69 was 6.0 percent; then an anticipated annual increase of 5.4 percent for 1970-75 is quite realistic, especially when viewed in the light of the Vocational Education Amendments of 1968. In the same manner, the predicted 1.6 percent annual rate of increase for 1975-80 made in this study was rather conservative and accounted for increases in population alone.

TABLE 4-3

AVERAGE PERCENT INCREASE PER YEAR IN TOTAL VOCATIONAL EDUCATION ENROLLMENTS FOR ALL STATES BY GRADE LEVELS FOR PERIODS INDICATED

Grade Level	*Average Percent Increase per Year for FY Period*		
	1966-69	*1970-75*	*1976-80*
(1)	*(2)*	*(3)*	*(4)*
TOTAL	6.0	5.4	1.6
Secondary	6.3	4.3	1.2
Post-Secondary	9.3	8.7	1.6
Adult	4.3	2.1	2.5
Special Needs	16.5	13.0	1.3

Source: Calculations based on Table 4-1 data.

A lower annual rate of increase in vocational education resulted for 1975-80 in this study because 1975 state objectives were applied to 1980 secondary enrollment data. This result produced a leveling off of enrollments after 1975. Therefore, the projections illustrated in this study represent a minimal enrollment estimate in vocational education for 1980.

PROJECTIONS OF VOCATIONAL EDUCATION COSTS FOR 1980

One of the major purposes of this study was to project the cost of vocational education to the nation in 1980, and to determine how much more vocational education will cost than will education in general. The estimate of this "excess cost" for public vocational education in 1980 was arrived at by multiplying the estimated percent of excess cost by the average cost per student; and by multiplying this product by the 1980 enrollment estimates for vocational education.

The National Education Association's Research Division publishes current expenditures per pupil, in grades K-12, by state each year. But neither NEA nor the U.S. Office of Education publishes the annual cost per secondary student. In order to obtain the annual cost per secondary student, which was used as a base for estimating the annual cost of vocational education, the cost per student, as reported by NEA, was multiplied by an adjustment factor (A), defined as follows:

$$A = \frac{(\text{K - 12 Enrollment})\,R}{\text{Elementary Enrollment} + (\text{High School Enrollment})\,R}$$

where R is the total amount spent for high school teachers' salaries per high school student divided by the total amount spent for elementary teachers' salaries per elementary student.

Nationally, (A) equalled 1.2.[13] The 1969 per pupil expenditure per student in average daily membership for grades K-12 was $717.[14] The product of (A) times $717 is $860 for the national average basic annual cost per secondary student in 1969-1970. For public junior colleges, an increased cost figure was used because the average junior college student cost about 1.2 more per year than did the average secondary student.

Information regarding the excess cost of vocational education courses was limited. Most studies reported the ratio of the average annual current cost per student of vocational education courses to the average cost of *all other courses.* Obviously, the average cost of *all other courses* was not the same as the average of *all courses,* as the latter included vocational courses. Inasmuch as the basic cost per student was the cost for all courses, including vocational education courses, the excess cost ratios, as reported in most studies, had to be adjusted before they could be used to project the excess cost of vocational education courses.

To make this adjustment, the following variables were defined:

P_1 = Percent of students enrolled in organized vocational programs. A student enrolled in a vocational program is counted as one enrollee even if most of his instruction is in general education.

P_2 = Percent of school time the average vocational student spends in vocational education courses.

P_3 = Percent by which the average annual current cost per student of *vocational courses* exceeds the corresponding average cost of *all other courses.*

P_4 = Percent by which the average annual current cost for *vocational students,* based upon all their courses, exceeds the corresponding average for *all students.*

To project vocational education costs when the base cost was the average for all students and when the number of vocational students was defined for P_1 above, the appropriate percent to use was P_4.

P^4 was obtained, using the following formula:

$$P_4 = \frac{P_2P_3 - P_1P_2P_3}{1 + P_1P_2P_3}$$

To derive the above formula for P_4, the following additional variables were defined:

C_v = Average annual current cost per student in vocational courses
C_g = Average annual current cost per student for all other courses

The average annual current cost of education for vocational students based upon all of their courses is:

$$\text{(I)}\quad P_2C_v + (1 - P_2)\,C_g$$

For all students, including those enrolled in vocational education, the average annual current cost is:

$$\text{(II)}\quad P_1P_2C_v + (1 - P_1P_2)\,C_g$$

P_4 + 1 equals the quotient obtained by dividing (I) and (II).

$$P_4 + 1 = \frac{P_2C_v + (1 - P_2)\,C_g}{P_1P_2C_v + (1 - P_1P_2)\,C_g}$$

$$P_4 + 1 = \frac{P_2\ C_v/C_g + (1 - P_2)}{P_1P_2C_v/C_g + (1 - P_1P_2)}$$

But P_3 is defined as:

$$P_3 = \frac{C_v - C_g}{C_g} = \frac{C_v}{C_g} - 1$$

or

$$P_3 + 1 = \frac{C_v}{C_g}$$

Substituting the expression for C_v/C_g, the formula for $P_4 + 1$ becomes:

$$P_4 + 1 = \frac{P_2\,(P_3 + 1) + (1 - P_2)}{P_1P_2\,(P_3 + 1) + (1 - P_1P_2)}$$

Simplifying the right side of the equation, transposing the 1 and placing it over a common denominator:

$$P_4 = \frac{P_2P_3 + 1}{P_1P_2P_3 + 1} - \frac{P_1P_2P_3 + 1}{P_1P_2P_3 + 1}$$

or

$$P_4 = \frac{P_2P_3 - P_1P_2P_3}{1 + P_1P_2P_3}$$

Secondary Excess Costs

In order to compute the secondary vocational education excess cost per student, values for P_1, P_2, and P_3 had to be obtained. The value for P_1 was identified from the latest state plans. The P_2 value came from 11 state education departments.[15]. Multiplying the P_2 for these states by their secondary enrollments produced a weighted average of 39 percent. This P_2 was rounded to one-third (⅓).

The value of P_2 was obtained from studies by Corazinni,[16] Weisgerber,[17] and Burke.[18] These studies revealed a range for the P_3 value of from 1.61 to 1.94. This was rounded to 1.6 - 1.9 and this range provided the "low" and "high" estimates for this study.

Using the formula for P_4, national high and low estimates of .13 and .20 were obtained. P_4 was multiplied by the estimated average cost per secondary school student to give an estimated national low and high excess cost per secondary vocational student of $112 and $172. The national average low and high cost estimates per secondary vocational student were $972 and $1,032.

These estimates of excess cost per secondary vocational education student, in 1969 dollars, were multiplied by the estimated 1980 enrollment to obtain national low and high estimates of the total excess cost of secondary vocational students in 1980. Nationally, the low estimate was $703,024,000 and the high was $1,079,644,000 (see Table 4-4).

TABLE 4-4

ESTIMATED EXCESS COST OF PUBLIC VOCATIONAL EDUCATION PROGRAMS FOR THE NATION IN 1980 (USING 1969 PRICES)

Level of Schooling	*Estimated Enrollment (in thousands)*	*Estimated Excess Cost (in thousands of dollars)*	
		Low	*High*
(1)	(2)	(3)	(4)
Secondary	6,277.0	$ 703,024	$ 1,079,644
Junior College	1,976.5	245,086	468,431
Adult	4,191.4	432,552	648,829
Special Needs	1,717.4	443,089	664,634
TOTAL	14,162.3	$ 1,823,751	$ 2,861,538

Sources: Column 2; From Table 1. Columns 3 & 4; Data taken from sections on excess cost for secondary, junior college, adult and special needs.

Junior College Excess Costs

To obtain an estimated annual base cost per junior college student, the costs per student in several studies were compared with costs per secondary student during the same school year.[19] The average cost ratio of junior colleges to secondary schools, per student, was 1.2. Thus, the estimated base cost per junior college student was $1,032 ($860 x 1.2).

To obtain a P_4 value for junior college costs, it was necessary to obtain values for P_1, P_2 and P_3 for junior colleges. Statistics from 11 states[20] revealed that the average public junior college student spent two-thirds (⅔) of his time in approved vocational education courses. Forty-seven percent of students in public junior colleges were enrolled in organized vocational programs.[21] These figures were rounded to 67 percent and 50 percent, respectively. Studies showed a range for P_3 of from .36 to .85. These were rounded to .40 and .90.

The national P_4 estimates of excess costs were .12 and .23. The low national excess cost per junior college vocational student was $124 ($1,032 x .12) and the high estimate was $237 ($1,032 x .23). The low and high excess cost estimates per junior college vocational student were multiplied by the estimated 1980 enrollment to obtain the total excess cost estimates for vocational students at the junior college level in 1980 at 1969 prices. Nationally, the low estimate was $245,086,000 and the high estimate was $468,431,000 (see Table 4-5).

Adult Excess Costs

Data from five state departments of education, weighted by 1967-68 enrollment figures, showed an estimated full-time enrollment (FTE) of 22 percent. This was rounded to .20 FTE. On the assumption that the majority of adults take vocational courses in secondary institutions, their vocational excess cost was arrived at by multiplying the basic secondary cost by the excess cost range of 60 percent to 90 percent. These excess costs were then multiplied by the estimated FTE of 838,280 (4,191,400 x .20) for adults in 1980. This then provided a 1980 adult excess cost of $432,552,000 as a low estimate and $648,829,000 as a high estimate.

Special Needs Costs

The number of special students in vocational education is rapidly increasing, as is the average cost per student.[22] These costs vary, depending on the particular student needs. Vocational students cost from 1.6 to 1.9 times the amount required for a regular secondary student. Special education vocational students were considered to spend 50 percent of their time in courses with added costs as compared to 33 percent time spent by regular vocational students. This assumption was made because these students' handicaps would require them to spend added time in high cost special courses.

After dividing the estimated 1980 enrollment in special education for vocational education (1,717,400) by 2, the quotient (the 1980 FTE special vocational education students) was then multiplied by the excess cost for these students (see Table 4-5).

TABLE 4-5

ESTIMATING SPECIAL NEEDS FOR VOCATIONAL EDUCATION EXCESS COSTS[1] FOR 1980 (1969 PRICE LEVEL)

	Low Estimate	High Estimate
1) Ratio of Excess Costs for Vocational Students to Costs of Secondary Students	1.6	1.9
2) School Cost per Secondary Student	$860	$860
3) Total Cost per Vocational Student	$1,376	$1,634
4) Excess Cost per Vocational Education Student	$516	$774
5) Full-Time Equivalent Special Needs Vocational Students in 1980	858,700	858,700
6) 1980 National Excess Cost for Special Needs Student	$443,089,200	$664,633,800

[1] Excess Cost equals costs above average secondary student. *Sources:* Items 1 and 2; From section on Secondary Excess Costs. Item 3; Row 1 x Row 2. Item 4; Row 3 less $860, the average annual cost per secondary school student. Item 5; 1,717,400 divided by 2. Item 6; Row 4 x Row 5.

The low estimate of the excess cost was $516 per secondary vocational special student and the high excess cost estimate was $774 per student. Multiplication of the excess cost by the FTE students in 1980 showed a low national excess cost of $443 million, and a high national excess cost of $665 million.

1980 Projections

At 1969 prices, the projected cost of vocational education in 1980 is expected to be between $1,824 million and $2,862 million above the cost of educating the same 14 million students in academic and vocational curricula (see Table 4-4). Accuracy of these estimates depends, of course, on the population projections made in this study, and on cost ratios between vocational education and all education obtained from those sources used.

For the high excess cost estimates, 38 percent of the total vocational education cost is expected to be for secondary schools, which will have 14 percent of the total national enrollment. Adult costs will comprise 23 percent of the total, because of the large number of adult students, 30 percent of the total vocational education enrollment. Special needs excess cost will comprise 23 percent of the total high estimate because of the high costs per student. Junior college outlays for vocational education are 16 percent of the estimated excess costs because junior college students cost about 1.2 times as much as secondary students, and because, by 1980, 14 percent of the vocational education students will be in two-year colleges.

In 1967, 33 percent of the students in secondary and post-secondary education were enrolled in vocational education.[23] With 8.3 million students enrolled in vocational education at these levels in 1980, it seems reasonable to anticipate expenditures of between $948 million and $1,548 million in excess costs for their vocational education.

These estimates are based upon incomplete information and, for this reason, are subject to error. However, the projections are useful for general planning purposes. Moreover, the method developed in this study should be useful in the future when more complete statistical information becomes available.

ALLOCATION OF FEDERAL VOCATIONAL EDUCATION FUNDS WITHIN STATES

The Vocational Education Amendments of 1968 made several changes in traditional vocational education policy which have particular relevance to this study. One was that state boards of vocational education could no longer allocate Federal vocational funds to local educational agencies on a uniform basis.[24] Individual characteristics of districts in terms of needs, wealth, and costs had to be considered in all state systems for allocation of Federal funds.

State boards were required to describe in detail the policies and procedures which constitute their systems of allocating Federal vocational funds among local educational agencies of the state.[25] Consideration was to be given to the following four basic criteria: (1) manpower needs, (2) vocational education needs of the population, (3) relative ability of districts to pay, and (4) excess costs. Also, states were allowed to include additional allocation policies and procedures as long as the four criteria were not neglected.

The following summary of state allocation methods is based upon an analysis of state plans for the following 15 states: California, Colorado, Florida, Illinois, Michigan, Minnesota, New Hampshire, New York, Ohio, Oregon, Tennessee, Texas, Utah, Washington, and Wisconsin.

Manpower Needs

Although meeting manpower needs has always been an objective from the beginning of the vocational education movement, states have encountered many difficulties in designing allocation systems which give due consideration to the manpower needs of their local educational agencies. One source of these difficulties is that traditionally the production and handling of manpower data has been the responsibility of the Department of Labor and its affiliated agencies. State divisions of vocational education have lacked personnel with expertise in the manpower area.

One of the practical difficulties generated by this traditional separation of manpower studies from vocational education is the problem of converting the Labor Department statistics, as published in the terminology of the *Dictionary of Occupational Titles,* to the classification system of the U.S. Office of Education. In one state, the Department of Human Resources interpreted its agreement with the Department of Education as justification for assigning a manpower expert to work with vocational adjustment personnel in the transposition of DOT language into U.S.O.E. vocational education program terms.

However, even with complete access to and understanding of the Department of Human Resources' data, some vocational educators believe that these data present only a partial picture of a local educational agency's manpower needs. For example, most farm positions are neither listed with nor filled by local offices of the Department of Human Resources. In only a few states has there been effective identification of local educational agency manpower needs. Essential data to this end have been obtained by means of intensive, cooperative area manpower studies by the regional offices of the Department of Human Resources, the Division of Vocational Education, and other public and private agencies.

Finally, some vocational educators object to local, or even regional, manpower needs as an allocation criterion because of the mobility of our population and the fluctuations that may occur in area job opportunities, caused by such factors as changes in Federal defense spending. These educators believe that a larger percentage of our students should be guided into vocational training in the broader skills which reflect state or national patterns of employment. They question the validity of allocating funds to a local educational agency for the development of a highly specialized vocational training program to meet the manpower requirements of an industry which may report a current large number of job opportunities and yet have a relatively short life in the area because of changing national economic conditions.

Table 4-6 summarizes the methods used to assess manpower needs in local educational agencies which were identified from an analysis of state plans and interviews in 15 states. Only two states treated manpower needs with specificity, by identifying job opportunities at the local, state, and national levels, to produce a quantified manpower factor for their allocation systems. One of these states ranked local educational agencies by the following criteria:

1. Number of unfilled job openings in locality.
2. Number of local job openings training to be provided for.
3. Number of state job openings training to be provided for.
4. Number of national job openings training to be provided for.

Seeking fewer specifics in considering manpower needs, four states used regional manpower studies to rank local educational agencies for funding. Four other states required their local educational agencies to identify manpower needs to be met by new vocational courses as a prerequisite for these courses being funded from Federal sources.

The most frequent practice was for the state plan to require that local plans and applications give due consideration to the manpower needs of the district in order for the local educational agency to qualify for Part B funds. In these states, a quantified manpower need factor was not subjectively nor objectively assigned to each local educational agency by state or local personnel. A local educational agency could satisfy the Federal-state requirement by including only a statement that manpower needs would be taken into account. Sometimes this affidavit would be accompanied by an additional statement that the local vocational education advisory council would consider the manpower needs of the area in planning the vocational program of the district.

The lack of specificity which predominated in the 15 sample states is verification of the difficulties encountered by states in trying to include manpower needs as a factor in their allocation systems to distribute Part B funds.

TABLE 4-6

METHODS USED TO ASSESS MANPOWER NEEDS IN THE ALLOCATION OF PART B FUNDS IN LOCAL EDUCATION AGENCIES (LEA)

State Policy	*Number of States*
1. Manpower needs of each LEA are quantified (numbers of job openings in the district and state, etc.) and become factors in the state's formula or ranking system for allocation of Part B funds to the LEA	2
2. Identification of manpower needs to be met by new vocational education courses is a prerequisite for LEA qualification for Part B funds for these new courses	4
3. State personnel utilize regional studies of manpower needs by school and non-school agencies for ranking of LEA's for Part B fund allocation purposes	4
4. State plans require that LEA plans and applications give due consideration to the manpower needs of the district in order for the LEA to qualify for Part B funds	5

Vocational Education Needs

In virtual contrast to manpower needs, which are defined as job opportunities in the labor market, vocational education needs are defined in terms of the needs of people.

In the implementation of the vocational education needs criterion, the states were faced with questions such as the following:

1. Is a simple enumeration of the vocational education class enrollments of regular, handicapped, and disadvantaged students an adequate description of the vocational education needs of a district?

2. Are the vocational education needs of a district the product of such factors as the ethnic composition of the school population, the unemployment rate of the area, the school dropout rate, etc.?

3. Are the vocational education needs of a district described by a combination of the answers to questions 1 and 2?

Once the method of defining the vocational education needs of the local educational agency was chosen, fewer difficulties were encountered with this criterion than with manpower needs. States had ready access to such district data as enrollments of regular students, ESEA Title I pupil counts, unemployment rates for areas, and ethnic surveys of school populations. However, states did have difficulty in identifying the specifically disadvantaged students.

Table 4-7 summarizes the methods used to describe vocational education needs in the allocation of Part B funds to local educational agencies. The most common method, used in seven of the 15 states, was to convert pupil counts of regular, handicapped, and disadvantaged vocational students directly to numerical factors in the state's allocation system for Part B funds. Use of enrollment data as a procedure for identifying district vocational education needs provided states with objective indicators that were readily available.

TABLE 4-7

METHODS USED TO ASSESS VOCATIONAL EDUCATIONAL EDUCATION NEEDS IN THE ALLOCATION OF PART B FUNDS IN LOCAL EDUCATIONAL AGENCIES

State Policy	*Number of States*
1. Pupil counts of regular, handicapped, and disadvantaged vocational students are converted directly into factors in the state's formula or ranking system for allocation of Part B funds to LEA's	7
2. Pupil counts of regular, handicapped, and disadvantaged vocational students are compared to other data such as total school enrollment, dropout rate, etc., to compute the vocational need factor in the state formula or ranking system for allocation of Part B funds to the LEA	2
3. State personnel utilize data other than pupil counts such as economic, demographic, evaluative studies, etc., to assign vocational education need weightings to LEA's which become factors in the state formula or ranking system for allocation of Part B funds to the LEA's	4
4. State plans require that the LEA's plan and application provide evidence of meeting the vocational education needs of the area in order for the LEA to qualify for Part B funds	2

A comparison of vocational education pupil counts with other data, such as total school enrollments and dropout rates, was used by two states to compute the vocational education needs factor.

A different approach from that of pupil counts made use of such data as area economic and population studies and evaluations of district vocational programs in order to weigh education needs in local educational agencies. This method was adopted by four states. Educators in these states believed that the non-enrollment data provided a better description of the vocational education needs of the people than were obtained from the simple, objective pupil count.

Two states did not specify the types of data to be used in identifying the vocational education needs of the local educational agency. These states required that the districts' plans and applications provide evidence of their own choosing that their vocational programs would meet the vocational education needs in their areas.

Relative Ability to Pay

Current discussions on the topic of equalizing educational opportunity emphasize that consideration must be given both to the disparity in the educational needs of people, and to the varying fiscal abilities of school districts to support needed program.

The following procedures were used in determining the relative ability of local educational agencies to pay for needed vocational programs:

1. Compare the adjusted assessed valuation per student of the district.

2. Compare the total taxable income per student of the districts.

3. Use some similar measure which the state board considers fair and equitable to all districts.[26]

Table 4-8 summarizes the methods used to evaluate a local educational agency's relative ability to pay for education. It shows that six states used the method of comparing the agency's adjusted assessed valuation per pupil to the state's average adjusted assessed valuation per pupil.

Although a local educational agency's effort factor, as indicated by its tax levy, is not suggested by the Act or by U.S.O.E. regulations, six states included effort in their implementation of the relative ability to pay criterion. Five of these states compared the local educational agency's tax levy and adjusted assessed valuation per pupil with the state's average tax levy and average assessed valuation per pupil. One state awarded points to local educational agencies for the amount of tax levied in excess of the required state minimum.

TABLE 4-8

METHODS USED TO EVALUATE THE LOCAL EDUCATIONAL AGENCY'S RELATIVE ABILITY TO PAY FOR EDUCATION IN THE ALLOCATION OF PART B FUNDS

State Policy	*Number of States*
1. State compares the local education agency's adjusted assessed valuation per pupil to the state's average adjusted assessed valuation per pupil	6
2. State compares the local education agency's tax levy and its adjusted assessed valuation per pupil to the state's average tax levy and average adjusted assessed valuation per pupil	5
3. State awards ranking points for the amount of LEA tax levied in excess of the state required minimum rate	1
4. State ranks LEA's according to their per pupil local fund assignment as determined by their index of economic ability which includes such components as state retail sales tax collected, motor vehicle registration, farm products sold, etc.	3

An index of economic ability, which may include such components as state retail sales taxes collected, motor vehicle registration, and farm products sold, was used by three states in evaluating a local educational agency's relative ability to pay. The index of economic ability determines the amount of local funds per pupil that a district is required to raise. This amount per pupil is used to rank local educational agencies for Part B funds. The districts that can raise the largest amounts of local funds receive the lowest amounts of Part B funds.

No difficulties were reported by states in implementing the Act's relative ability to pay criterion. Adjusted assessed valuation per pupil, tax rates levied, and indices of economic ability were readily available from the states' general education state-aid data.

Excess Cost

After determination of manpower needs, vocational education needs, and the relative ability to pay, a final criterion to be considered in the allocation of Part B funds is the excess cost of vocational education programs.

Table 4-9 summarizes the methods used to define the excess cost of vocational education programs. Eight of the states determined the excess cost to the local educational agency by comparing each agency's per pupil cost of vocational education with the state's average per pupil cost of education. The popularity of this method rests on two factors: (1) the state average per pupil cost of education is one of the most readily available of statistics used in measuring educational costs; and (2) the comparison of the local vocational education cost per pupil with the state's average per pupil cost of education comes nearest of any other procedure to the literal implementation of the definition of the excess cost criterion of the 1968 Act.

The remaining seven states determined their local agencies' excess costs by comparing each agency's per pupil cost of vocational education with other educational costs. Three of the states compared their districts' per pupil costs of vocational education with the state average per pupil cost of vocational education. Three other states compared each district's vocational education per pupil cost with its per pupil cost of education. One state compared its districts' vocational education costs per pupil with the amount of funds the districts received per pupil through the state foundation program.

TABLE 4-9

METHODS USED TO DEFINE THE EXCESS COST OF VOCATIONAL EDUCATION IN LOCAL EDUCATIONAL AGENCIES IN THE ALLOCATION OF PART B FUNDS

State Policy	*Number of States*
1. State compares the local educational agency's per pupil cost of vocational education to the state's per pupil foundation program amount	1
2. State compares the local educational agency's per pupil cost of vocational education to the state's average per pupil cost of education	8
3. State compares the local educational agency's per pupil cost of vocational education to the state's average per pupil cost of vocational education	3
4. State compares the local educational agency's per pupil cost of vocational education to the local educational agency's per pupil cost of education	3

The states reported having more difficulty with the excess cost criterion than with any of the other Federally mandated criteria. In fact, although states have specified procedures for using excess costs in their allocation systems, few states have been able to identify completely the excess costs inherent in vocational education.

State education agencies have begun to experiment in the development of procedures for determining the total cost of vocational education and a method by which to ascertain its excess cost. However, vocational education staffs have found that they could not obtain much of the necessary data.

The major difficulty for most departments was the lack of a program accounting system. Although many states had developed various reporting forms designed to get at excess costs, the forms did not identify the indirect cost of vocational education, and, as a result, failed to reflect an accurate total cost of vocational education (see section on Determining the Cost of Vocational Education).

Other Allocation Criteria of the States

States have selected additional allocation criteria to be used in determining the funds to be distributed to local educational agencies. Table 4-10 summarizes those additional criteria which were being used in the states in which a detailed study was made. One criterion was used to give local educational agencies additional points for implementing new vocational education programs. This criterion of "innovation" was used by two of the 15 states included in the study. One state awarded funds on a competitive grant basis to those districts which developed vocational education programs to meet new needs that had been identified in regional studies. The second state gave its local educational agencies a higher priority rating in its Part B entitlement system for implement new vocational education programs that met newly identified needs.

TABLE 4-10

ADDITIONAL CRITERIA USED IN ALLOCATING PART B FUNDS TO LOCAL EDUCATIONAL AGENCIES

State Policy	*Number of States*
1. Implementation of new vocational education programs	2
2. Results of follow-up studies of vocational education program graduates	1
3. District pupil-teacher ratio	1
4. Ratio of certified teachers to all certified personnel	1
5. Rate of teacher turnover	1
6. Number of supervisors of vocational education programs	1

Other criteria shown in Table 4-10 were infrequently used, none being used in more than one state. The "follow-up studies of vocational education graduates," and the "number of vocational education supervisors" indicate the nature of a local vocational education program and, therefore, are valid criteria for allocating funds. However, the other criteria shown in Table 4-10 are subject to question as components of a vocational education fund allocation system.

Funds Allocation Systems

Application of the above criteria in determining the relative priority of local applications has resulted in the development of two types of allocations systems. These can be described in general terms as (1) a formula, and (2) a ranking system.

The formula system, employed in four states, attempted to quantify the allocation criteria into objective data for each local educational agency. Examples of the types of data quantified for local districts were:

1. The average daily attendance (ADA) of regular, handicapped and disadvantaged students in vocational and non-vocational courses.

2. The adjusted assessed valuation per ADA for the local district compared with the state average for such districts.

3. The local tax rate levied compared with the state average or required minimum rate for such districts.

4. The unemployment rate for the district's area compared with the state's average unemployment rate.

5. The number of job opportunities in the district compared with the number available in the state.

6. The cost of the local vocational education program in excess of the cost of general education for comparable school organizations.

These data were combined in different ways by states to produce decimal equivalents for all districts in the state. These were then multiplied by the state's total Part B funds to arrive at a district's entitlement. These entitlements were communicated to each district. If the district vocational education program met the rest of the requirements of the state's plan, the district received its entitlement.

Formula systems attempted to make the allocation decision making completely impersonal and objective. This aim was not achieved completely, as a certain amount of subjectiveness entered into the treatment of such varied and broad data as weighted ADA, equalized assessed valuations, employment rates, and definitions of excess cost. However, once decisions were made on these data, formula systems were largely objective.

A further advantage of formula systems was that they could readily be computerized. One state was able to retrieve the district input data of enrollments, assessed valuations, and tax rates from the computer data banks of the general state aid system and apply these data in the Part B funds allocation formula with increased efficiency in administration of these funds.

The ranking systems for allocation of Part B funds, used by 11 of the 15 states, treated the allocation criteria more subjectively than did the formula systems. Three sources of subjectivity were apparent in these ranking systems:

1. The application of a ranking system to different districts by one individual.

2. The application of the same ranking system to different regions within a state by different individuals.

3. The use of ranking questions with "soft," nonnumerical answers.

An example of the subjectivity inherent in the ranking system was one of several questions used by one state as a measure of the local educational agency's manpower needs: "Is training provided for a new occupational program in the LEA or for emerging jobs?" The maximum point value for manpower needs that a district could earn on this rating scale with "yes" answers to *all* questions was *50*. A "yes" answer to the above question earned a district *20* points; a "no" answer only one.

While ranking systems were subjective, they had the advantage of being flexible. Where formula systems utilized only three to five items of quantified data, ranking systems contained greater numbers of data in their procedures. The following items, some of which were also used in formula systems, can be provided for easily in a ranking system:

1. Job opportunities
2. Unemployment rates
3. Population characteristics
4. Enrollments (regular, handicapped, disadvantaged)
5. Dropout rates
6. Economically depressed areas
7. Assessed valuations
8. Tax rates
9. Excess costs
10. Implementation of new programs
11. Results of evaluation studies
12. Supervision of vocational education programs.

Some procedures for computing Part B fund entitlements for local districts, as used in state application of ranking systems, were the following:

1. Districts were ranked from highest to lowest priority for total funding to the extent that Part B funds were available. Usually, lowest priority projects received no Part B funds.

2. Ranking points were totaled for each district. Quartile rankings of districts were then computed. Each district received a percentage payment of its approved application, depending on its quartile placement.

3. Ranking points were totaled for each district. District totals were summed for the state. The state point total was divided into the Part B funds available, yielding a dollar value for each point. District point totals were then multiplied by the dollar point value to compute the district allocation.

4. One state intended to build an improvement incentive into its ranking system. A district's current year's ranking to all other comparable districts in the state was compared with the past year's ranking. A district was rewarded with a larger allocation of Part

B funds for improvement in its ranking over its past year's standing.

A LOOK AHEAD

This report indicates some of the difficulties encountered in analyzing problems related to financing vocational education. The lack of a standardized program accounting system makes the obtaining of valid estimates for the cost of vocational education difficult. Hopefully, this deficiency will be remedied when the new public school accounting guide is published by the U.S. Office of Education.

Other developmental work is needed before a satisfactory system for financing vocational education can become a reality. Among these needs are the following:

1. Development of a Formula for Estimating per Student Costs of Vocational Education Courses and Programs.

An objective procedure is needed for estimating and controlling the costs of approved vocational education courses and programs. Although it is needed primarily for state administrative purposes, such a formula would also be useful in projecting costs for long-term planning purposes.

A formula useful for this purpose probably would have the following general structure:

Cost per student = $\overline{C}\,(\overline{N}/N + K)$

where $\overline{C}$ = the state average cost per student enrolled in secondary schools or junior colleges.

$\overline{N}$ = the state average student-faculty ratio in secondary schools or junior colleges.

N = the expected or approved student-faculty ratio for the vocational education course or program.

K = a program constant reflecting unusual requirements of the vocational course or program not related to class size. The value of K would vary for different programs.

While this formula appears to have possibilities, additional research is needed to ascertain values for the constant K and to test how accurately it predicts costs.

2. Development of Policies for Sharing the Cost of Vocational Education between the Federal Government and the States.

The formula for allotting Federal vocational education funds among the states contained in the Vocational Education Act of 1963, as amended in 1968, is designed to apportion among states such amounts as may be appropriated. The amounts allotted to each state are proportional to the product of the state's population in designated age groups and its allotment ratio.

The allotment ratio is equal to one minus one-half of the quotient obtained by dividing the per capita personal income of the state by the national average per capita income. The ratios computed in this manner are intended to reflect the capacity of a state to finance needed vocational education programs from state and local tax sources. The application of the allotment ratio formula is constrained by a provision that the ratio may not exceed .6 nor be less than .4. The average value of the allotment ratios is, of course, very close to .5.

Several questions may be asked concerning the allotment formula. Are the population age groups satisfactory measures of the amount of vocational education needed? Can one assume that the cost per person of needed vocational education is the same in all states? Does the allotment ratio, constrained within the legal limits of .4 and .6, provide adequately for equalizing the tax burden for vocational education?

In order to answer these questions, a more precise formula for estimating the cost of an adequate vocational education program for each state is needed. Such a formula would need to consider, in addition to the population for selected age groups, the amount of vocational education required to attain entry level skill for the occupations normally available for initial employment in the state. It would also need to consider prevailing wage rates and other factors affecting the unit cost of education.

After the cost of an adequate vocational education program has been determined for each state, various policies for sharing the cost between the Federal government and the states need to be examined. Should the state be expected to provide from state and local tax sources for the support of vocational education the same amount per student it provides for general education, counting upon the Federal government to contribute the "excess" cost of the more expensive courses or should the Federal contribution for vocational education be based upon the total cost of vocational education courses?

If the latter cost base is used, it probably will be necessary to use the equalized matching or variable percentage grant to share the cost between the Federal government and the states. These and other cost sharing policies need to be examined.

3. Development of Satisfactory Models for Allocating State and Federal Vocational Education Funds among Local School Systems.

In this report, 15 state plans for allocation of Federal vocational education funds to local districts have been analyzed. The analysis indicates that the allocation criteria (manpower needs, vocational education needs, relative ability to pay, and excess costs) established by the Vocational Education Amendments of 1968 are sound bases for allocating Federal vocational funds to local districts. However, experience in the 15 states reviewed in this study revealed several unresolved issues:

1. Should the definition of the manpower needs of a local educational agency include local, regional, state, or national employment opportunities?

2. How should the excess cost of vocational education, used in the allocation of Federal funds, be computed? What part of the excess cost should be reimbursed from Federal funds?

3. Should Federal funds be used to pay the total cost of some approved vocational education programs, e.g., adult education?

4. How can some states distribute their Federal vocational funds more objectively?

5. What additional criteria should be used in states' systems for allocating Federal funds for vocational education other than the four mandated by the Act?

With the resolution of these issues, this study indicates that allocation models of the future will move toward objective, computerized systems based on more classes of data than the now commonly used attendance, assessed valuation per pupil, and tax levy.

FOOTNOTES

1. Herbert Righthand, "What Research Has to Say for Industrial Education," *Journal of Industrial Education*, Volume 2, Number 1 (Fall, 1964), p. 5.

2. California Board of Education, *State Plan for Vocational Education*. Sacramento: California, 1919, p. 40.

3. *Ibid.*, p. 27.

4. Eli Ginzberg, "Social and Economic Trends," *Vocational Education*, Sixty-Fourth Yearbook of the National Society for the Study of Education, Part I. Chicago: University of Chicago Press, 1965, pp. 22-23.

5. Edward T. Chase, "Learning to be Unemployable," *Harper's Magazine*, Vol. 33 (April, 1963), p. 226.

6. U.S., Department of Health, Education, and Welfare, *Education for a Changing World of Work*, Washington: Government Printing Office, 1963, p. 5.

7. Gilman G. Udell (compiler), *Laws Relating to Vocational Education and Agricultural Extension Work*, Washington: Government Printing Office, 1962 p. 1.

8. Layton S. Hawkins, Charles A. Prosser, and John C. Wright, "Smith-Lever Act (1914)," Development of Federal Legislation for Vocational Education, compiler: J. Chester Swanson. Chicago: American Technical Society, 1951, p. 23.

9. Udell, p. 361.

10. Hawkins, p. 107.

11. *Ibid.*

12. The adjustment factor was derived from 1975 data to reconcile discrepancies in the 1980 projections of this study. It consisted of a ratio of state-based projection to census-based projection for each state in secondary vocational education. Some discussion of the adjustment factor will follow in this report.

13. National figures for ADM, teachers' salaries, and the numbers of teachers and students were obtained from the National Education Association's Research Division's *Estimates of School Statistics*, 1969-70. Washington: NEA, 1969, pp. 27, 31, and 33.

14. *Ibid.*, p. 37.

15. State data were gathered from Colorado, Illinois, Michigan, Minnesota, New Hampshire, Ohio, Oregon, Tennessee, Texas, Utah, and Washington.

16. A.J. Corazzini, *Vocational Education: A Study of Benefits and Costs*. Princeton: Princeton University, 1966.

17. W. Weisgerber, "Operational Cost Estimates for Michigan Secondary Vocational Programs," Lansing: State Department of Education, Division of Vocational Education.

18. Arvid J. Burke, "Preliminary Cost Data Tables," *Need and Cost Differentials for Programs of Compensatory Education*. Albany: State University of New York at Albany, 1970.

19. The following junior college studies were used: (a) Marvin C. Alkin, *Financing Junior Colleges in California: A Critical Analysis of the State Support Program*. Sacramento: Junior College Advisory Panel, California State Board of Education, 1966, p. 62; (b) Ernest F. Anderson and James S. Spencer, *Report of Selected Data and Characteristics, Illinois Public Junior Colleges, 1966-67*. Springfield: Illinois Junior College Board, 1967, Tables 19, 40, 51, 65, 76; (c) Ernest F. Anderson, *Differential Costs of Curricula in Comprehensive Junior Colleges* (unpublished Doctor's dissertation, University of Illinois, 1966), Table 6; (d) Bob N. Cage, *Cost Analysis of Selected Education Programs in Iowa*. Des Moines:Iowa State Department of Public Instruction, 1968; (e) Albert H. Martin and Carl E. Thornblad, *Report of Selected Data and Characteristics of Illinois Public Junior Colleges*, 1969-1970. Springfield: Illinois Junior College Board, 1970, Table 49; (f) Marshall W. McLeod, "Cost

Survey," Little Rock: Commission on Coordination of Higher Education Finance, 1970; (g) Eldridge E. Scales, *Current Operating Costs of 2-Year Colleges in the South*, Atlanta: Southern Association of Colleges and Schools, 1969. Cost figures derived from the above studies were compared with cost figures for pre-junior college education, corrected by "A" for secondary education. These figures came from U.S., Office of Education, *Digest of Educational Statistics*. Washington: Government Printing Office, 1966, 1967, 1968; and U.S., Office of Education, *Statistics of State School Systems*, 1963-64. Washington: Government Printing Office, 1968.

20. California Board of Education, p. 40.

21. U.S., Department of Health, Education and Welfare, *Vocational and Technical Education*, Annual Report, Fiscal Year 1967. Washington: Government Printing Office, 1969, p. 105; and U.S., Department of Commerce, *Statistical Abstract of the United States*, 1969. Washington: Government Printing Office, 1969, p. 124.

22. Data on special needs students and funds spent came from: U.S., Office of Education, *Vocational and Technical Education*. Washington: Government Printing Office, 1965, 1966, 1967; and U.S., Office of Education, *Digest of Educational Statistics for 1969*. Washington: Government Printing Office, 1969.

23. U.S., Department of Commerce, *Statistical Abstract of the United States, 1969*. Washington: Government Printing Office, 1969, Table 160; and U.S., Department of Health, Education and Welfare, *Vocational and Technical Education*, Annual Report — Fiscal Year 1967. Washington: Government Printing Office, 1969, Tables 2 and 3.

24. U.S., Congress, *Public Law 90-576, Vocational Education Amendments of 1968*, October 16, 1968, Section 123-6E.

25. U.S. Office of Education, *Regulations for State Plan Programs (Vocational Education Amendments of 1968)*, Section 102.51-3d.

26. U.S.O.E. Reg., *op. cit.*, Section 102.55.

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CHAPTER 5

Financing Adult and Continuing Education

J. ALAN THOMAS

INTRODUCTION

The financing of adult education in the United States is the subject of this chapter. Some of the implications which present fiscal procedures have for programs and enrollments are examined. In the concluding section consideration is given to possible policy changes for the future.

It is first necessary to define the limits of the problem under investigation. We have eliminated from serious consideration in this study those informal educational activities in which many adults participate. Many experiences such as reading, watching television, and conversing with others (including members of one's immediate family) are educational in nature. However, such activities are largely self-initiated and self-financed, and can be disregarded in a public finance study.

Much of adult education in the United States is provided through the private sector of the economy. All large business corporations provide on-the-job training programs. In addition, informal learning experiences constitute a part of most occupations. Although these aspects of education are important, we do not include them in this study. We also exclude from consideration those programs produced and sold by proprietary agencies. Programs offered in the armed services, the Department of State, and the Department of the Interior are also excluded.

Finally, we exclude the many programs offered for adults by universities and junior colleges. The latter constitute the subject of another study sponsored by the National Educational Finance Project. The former are beyond the scope of the Project.

Our main concern is with the educational programs which are offered to adults by elementary and secondary school systems. The term "adult" is taken to include individuals who are beyond the compulsory school leaving age, and who do not attend institutions of higher learning.

Even with these limitations, the problem under investigation is extremely complex. Nor can it readily be separated from the other N.E.F.P. studies. All parts of the total educational enterprise are inter-related, and these inter-relationships are an integral part of the services which school systems provide.

Consider, first, the relationship between this study and the study of financing elementary and secondary education. It is difficult to perceive how our society can successfully educate children without simultaneously providing educational opportunities for their parents. Educational administrators recognize these relationships when they hold "parents' nights" and when they organize parent-teachers associations. Teacher-parent conferences have the purpose of educating both teachers and parents. The school-community agents who have been employed in some large school systems also have an adult education function, that of developing home-school relationships, and of helping parents and students understand each other.

These kinds of relationships are particularly salient in the case of the education of children who are handicapped physically, mentally, or environmentally. For reasons of efficiency, educational programs for the handicapped should be accompanied by parent education. Programs for the economically or socially disadvantaged should have an adult education component in order that the efforts of the school may be reinforced in the home.

A more arbitrary distinction must be made between this study of the financing of adult education and the N.E.F.P. study of vocational education. Programs of skill development, retraining programs for those who have been displaced because of technological change, and programs for the "hard-core unemployed" are all directed toward adults. Since vocational education is being examined in a separate study, it is treated in this chapter only as one aspect of the provision of education for adults.

Finally, the distinction between this study and the study of financing junior colleges is an organizational rather than a conceptual one. The states deal in different ways with the financing of junior colleges and the financing of adult education in elementary and secondary school systems. Sometimes programs of a given type are offered by one of these institutions; sometimes they are offered by the other. In some communities, junior colleges and elementary-secondary school systems compete with each other for clientele. Legislatures must make decisions about the allocation of responsibility on the basis of the conditions in a given state. Our concern in this study is that these decisions should be made with the goal of providing services efficiently and equitably to members of the population.

This study differs in some essential respects from the other N.E.F.P. studies. Most importantly, it must be recognized that with some exceptions compulsory education does not apply to adults. In certain instances, attendance at school may be required for receiving public assistance, or for continuing in a given employment. In most cases, however, education is used as a means of advancing one's social or economic position, and enrollment is optional.

It is therefore anticipated that adults will make decisions on the basis of the benefits they expect to receive from a course or program and its cost to them. The aggregate of these individual decisions constitutes "demand" for programs of adult and continuing education. Public agencies respond to demand by providing information to the public or through other methods of advertising.

The above discussion suggests that adult education is based on a different rationale than that which underlies the education of elementary and secondary school students. This difference is an important one, since it affects policy decisions in the field of adult education. The following section examines this rationale.

RATIONALE

This study is based on the concept that the public and private institutions responsible for the education of adults are service-producing agencies. The services which are produced may be consumed or they may constitute an investment in the capabilities of individuals. The demand for adult education services is manifested in the amount and quality of services which people are prepared to purchase at a given price. Since education for adults is mainly voluntary, we can estimate the degree to which these services are demanded by observing enrollments in various programs.

An underlying assumption is that decisions to participate in adult education activities are made by individuals. The aggregate of individual decisions becomes the demand for various kinds of services in a given community. However, individuals' decisions can be affected by agencies of society, which may increase the supply of various kinds of adult education offerings, provide information about the availability of courses and about the usefulness of adult education, or reduce the price to the purchaser of adult education.

Education may be viewed as an embodiment of productive capabilities in the human agent. The more education a person has, the greater (on the average) are his earnings. Also, a society with a high level of education tends, on the whole, to have a highly productive labor force. Much economic research has centered on the measurement of the costs and benefits, to the individual and to society, associated with obtaining additional amounts of schooling.[1]

Economists also emphasize that education produces many benefits which cannot be measured in monetary terms. Education produces gratifications, both immediate and deferred, which can best be called consumption rather than investment. These kinds of benefits cannot readily be measured. However, most people agree that these less tangible, non-pecuniary outcomes of education are vitally important although they are often not regarded as major motives for participation, particularly among individuals with low incomes.

The benefits of education are diffused through the entire society. A student's family, his friends, his neighbors, and the country he lives in receive some of the advantages of his schooling. The presence of educated people in a society makes possible the availability of such amenities as high quality newspapers, literary journals, music, art, and drama. A concerned and informed electorate, one of the prerequisites of demoncratic government, depends upon an efficient educational system. In a society undergoing rapid technological change, adult education is an important way of reducing structural unemployment.

Benefits which are received by third parties (other than the educator and his students) are called externalities or "neighborhood effects."[2] Such benefits often result from the education of adults. Consider, for example, the training of a relief recipient. If this training results in his obtaining productive employment, so that he becomes a taxpayer, other taxpayers will benefit. Adult education produced by agricultural extension courses may result in higher farm productivity and lower food prices.

Adult and Continuing Education as Investment

A major part of the activities in adult and continuing education contributes to individual and social productivity and may therefore be regarded as an investment. The contribution may be either direct or indirect. Education contributes directly to income when the possession of a certificate indicating the completion of a given level of schooling permits an individual to obtain employment and income he otherwise could not obtain. It contributes indirectly through adding to a person's knowledge and skills, which can then be used to improve his productivity in the labor market. Our concern in the following section is mainly with these indirect contributions.

This contribution of adult education may take several forms. First, it may constitute an addition to an individual's existing skills. Second, it may be equivalent to the need for the owner of physical capital to take account of depreciation. The stock of knowledge possessed by a given individual tends to decrease over time (due to forgetting) and education is needed to compensate for this. Third, adult education may compensate for obsolescense, or the tendency for a given body of knowledge to become outdated.

Adult and Continuing Education as Consumption

Some courses are intended to enable individuals to obtain utility from their consumption activities. A course in gourmet cooking for housewives or husbands, for example, develops skills which permit greater satisfaction to be obtained from a given expenditure for food. The utility to be gained from consumption-type courses is not confined to the learning period — it may enrich life for the future as well.

A decision to purchase investment-type courses is quite different from a decision to purchase courses which provide consumer satisfaction. Some people may elect both. It is not always possible to predict how an individual perceives a given course — what is investment for one may be consumption for another. However, individuals who are unemployed, who have little education, or who have low income may be so pre-occupied with economic survival as to choose, on the average, courses directed toward improving their economic status. Conversely, individuals who are employed, well-educated, and receive a relatively high income level might be expected to show a tendency to enroll in consumer-type courses.

Education for consumption may also have third-party benefits, although these benefits may not be as visible as when adult education provides access to income producing employment. We are affected by our neighbors' consumption patterns; in some communities these third party benefits may be considered high enough to justify governmental subsidies of consumption-type courses.

Private Demand for Adult Education

Economic theory suggests that the demand for a good adult education is a function of price, income, and preference. The price to a purchaser of adult education includes tuition and other out-of-pocket expenses, and indirect costs such as foregone earnings. Considering other things equal, the quantity of adult education which is demanded may be expected to increase as tuition costs decrease.

Individuals with higher income may spend more for adult education than will those with lower incomes. However, they may also encounter higher costs, since they may place a higher value on their time, due to the nature of foregone opportunities.

Each individual may possess his own "preference function" which includes a valuation of educational services. Included in this function will be a preference for consumption or investment, and preferences with regard to specific courses.

Public Demand for Adult Education

Economists agree that education provides benefits for others than those who enroll in programs. There are many cases where the benefits to society at large are so extensive as to warrant substantial subsidies for adult education.

1. Our economy is highly dependent on a well-trained and flexible work force. In a period of rapid technological change, new skills are constantly required. If the supply of individuals for certain kinds of employment is less than the demand, bottle-necks are created which will interfere with the orderly growth of the economy. There are, therefore, strong arguments for governmental subsidy of manpower development programs. Such programs encompass a wide variety of offerings, from the on-the-job training programs offered in many industries to programs offered by our secondary schools, junior colleges, and vocational schools. Programs for training the so-called "hard-core unemployed" also fall into this category.

Another justification for programs for low income adults is that low educational levels for large numbers of people cannot be accepted in a functioning democracy. Communication is important in maintaining a socially-integrated society, and effective communication depends upon literacy. One example of socially important communication is that involved in keeping individuals aware of income tax laws, and permitting them to fill out their tax returns. In an illiterate society, the personal income tax, as we know it, would be impossible.

2. The present level of poverty as it occurs among certain geographic, ethnic, and socio-economic groups, is unacceptable to a large sector of our population. One way of reducing poverty is through education; adult education programs can be justified, in part, on the basis of their success in increasing the income level of under-educated adults.[3]

The above analysis has important implications for our research, and the questionnaires were developed with this theoretical approach in mind. The data analysis is influenced by the above rationale. Our policy recommendations are also related to this theoretical approach.

DEMAND FOR ADULT EDUCATION

The key concept in the financing of adult and continuing education is "demand." Private demand is manifested by individuals who wish to enhance their "consumption skills" or to invest in their own capabilities. Public demand is a result of the perception that there are social benefits to be obtained by making adult education courses available to certain sections of the population.

One major responsibility of the adult educator is to obtain some estimate of the amount and nature of private demand for adult education. He may conduct "market surveys" to determine the kinds of courses which people want. He may also use the results of research into the characteristics of individuals who enroll in various kinds of adult education courses. With the help of suitable advisors, including business men, he will make judgments about social demand or "need."

Fortunately for the field of adult education, several important studies of the characteristics of people who enroll in adult education courses have been conducted. The monumental work of Johnstone and Rivera is the most significant of them.[4] We did not attempt to replicate Johnstone and Rivera's work. We did, however, circulate questionnaires to employees in a sub-sample of our school systems. We are able, on the basis of these questionnaires, to make some statements about the characteristics of individuals who enrolled in consumption-type courses and investment-type courses.*

Individual Characteristics and Demand for Adult Education

In our sample, people with higher income tended to participate more in adult education than those with lower income. Table 5-1 below also shows that people in the lower income categories tend to take courses that are job related whereas people in higher income categories prefer leisure related courses. There are no sharp differences between men and women in this regard except that more women with family yearly income below $5,000 enrolled in Category III courses. A possible explanation for this observation is that these women are taking courses in cooking or sewing or housekeeping. While they do not intend to sell the skills they acquire on the market, they can use them in their home to increase the well-being of their family. To the extent that this is true, our procedure of regarding skills that are useful in market production as investment and those that are useful in domestic or home production as consumption is open to question.

Table 5-2 shows the distribution of participants over educational categories. A curvilinear relationship between education level completed and participation in adult education is apparent.

Table 5-2 also shows that people with high school education or less participate relatively more in Category I and II courses rather than Category III. People with more than high school education, on the other hand, participate relatively more in Category III courses.

Most of the students in our sample were under 40 years of age. Younger people tend to enroll more in Category I (investment) courses than the older people who seem to be inclined toward participation in Category III (consumption) courses, as shown in Table 5-3. One would expect the young to be more interested in job-related education than the aged since they would have a longer working life ahead of them over which to keep the benefits of investment in job related education. Category III courses would attract more older people interested in making better use of their leisure time.

The above analysis of individual preferences constituted only

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* The courses were categorized as Category I (investment), Category II (mixed), and Category III (consumption). A course in gourmet cooking would be clearly Category III. A course in shorthand would fall into Category I. An example of a course in Category II would be "do-it-yourself" carpentry.

TABLE 5-1

DISTRIBUTION OF STUDENTS ACCORDING TO FAMILY YEARLY INCOME

Income	*Male*			*Female*			*Total*			*Total*
	Category I	*Category II*	*Category III*	*Category I*	*Category II*	*Category III*	*Category I*	*Category II*	*Category III*	*All Categories*
Under $1,000	6	0	1	12	1	2	18	1	3	22
Between $1,000 and $1,999	8	1	0	4	12	1	12	13	1	26
Between $2,000 and $2,999	4	3	0	12	5	9	16	8	9	33
Between $3,000 and $4,999	23	7	0	25	14	20	48	21	20	89
Between $5,000 and $6.999	41	6	5	18	23	30	59	29	35	123
Between $7,000 and $8,999	24	24	8	15	12	24	39	36	32	107
Between $9,000 and $10,999	22	14	17	24	20	35	46	34	52	132
Between $11,000 and $12,999	10	5	9	10	12	20	20	17	29	66
Over $12,999	17	18	36	22	19	47	39	37	83	159
Total	155	78	76	142	118	188	297	196	264	757

TABLE 5-2

DISTRIBUTION OF STUDENTS ACCORDING TO EDUCATION AND COURSE CATEGORY

Education Level	*I* *Investment Courses*	*II* *"Mix" Courses*	*III* *Consumption Courses*	*All Courses*
Less than Elementary Education	3.7% 14 (29.2%)	6.9% 14 (29.2%)	7.2% 18 (37.5%)	2.2% 46
Grades VIII-XI	49.9% 148 (53.0%)	34.5% 70 (25.1%)	21.1% 61 (21.9%)	35.4% 279
Grade XII (High School)	32.9% 95 (18.7%)	36.5% 74 (29.4%)	28.8% 83 (32.9%)	32.0% 252
College	13.4% 40 (19.0%)	22.2% 45 (21.3%)	43.7% 126 (59.7%)	26.8% 211
	297 (37.7%)	203 (25.8%)	288 (36.5%)	100% 788 (100%)

Note: the column percentages are given in the upper-left corner of the cells and the row percentages are given in the lower-right corner of the cells.

a small part of our study. Our major efforts involved an analysis of the financing of adult education in 40 school systems located in 10 states.[*] The following analyses were based, for the most part, on districts rather than individuals. The "ecological fallacy," or the tendency to infer individual behavior on the basis of data about communities, is evident in some of our conclusions. However, data collected from individuals tended to support our conclusions.

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[*] The states and districts were: Texas (Fort Worth, McCamey, Laredo); North Carolina (Winston Salem, Kinston, Sylva, St. Paul's); Illinois (Glenview, Bloomington, Rockford, Chicago, East St. Louis); New York (White Plains, Niagara Falls, Newburgh); Maine (Presque Isle, Portland, Van Buren, Biddeford); Michigan (Midland, Detroit, Manistique, Muskegon Heights); Florida (Ft. Lauderdale, Miami, Quincy,); New Jersey (Maplewood, Wayne, Fair Lawn, Newark, Vineland); California (Palo Alto, Los Angeles, Sacramento, Oakland, Stockton); Mississippi (Meridian, Houston, North Carrolton).

The method of choosing our sample is described in the full report. The four major cities included in the sample are not given special treatment in this summary chapter, but are analyzed in detail in a separate chapter of the full report.

TABLE 5-3

DISTRIBUTION OF STUDENTS ACCORDING TO AGE AND COURSE CATEGORIES

Age	*Category I*	*Category II*	*Category III*	*Total*
Under 20	57	21	24	102
Between 20 & 29	114	59	65	238
Between 30 & 39	71	54	72	197
Between 40 & 49	47	52	57	156
Between 50 & 59	11	17	47	75
Between 60 & 64	3	5	13	21
Over 64	0	0	9	9
Total	303	208	287	798

Community Characteristics and Demand for Adult Education

Where state or local tax revenues are available, directors of adult education, sometimes with the help of advisory committees or boards of education, may survey the "needs" of a community and provide courses to meet those needs. In a number of cases, according to our data, business and industry leaders participate in these surveys of needs, and provide advice regarding their employment requirements. In these cases a curriculum is established, based on requirements which have been defined by others than the adult enrollee.

However, many adult education programs are responsive to the demands of individuals, as opposed to perceptions of "social needs". In these cases, programs are established when a given number of individuals signifies an interest in them. This interest may be self-initiated, and presented in the form of a petition, or it may come about as a result of a survey made by the adult educator and his staff.

Being on the mailing list of other adult education programs is another common way in which directors obtain ideas for curriculum offerings. By examining the courses offered elsewhere, a director may be led to perceive a social need (or a source of funds) for new courses in his community, or he may find new or unusual offerings for which he believes individual demand would be expressed were he to make them available in his program.

Three statements may be made about the distinction between social need and private demand. These statements are based on data gathered during the study.

1. As mentioned above, the distinction may be based on source of revenue. By and large, when money comes predominantly from the Federal government, the emphasis is on programs which are designed to meet a social need defined by Congress. (See Table 5-4)

TABLE 5-4

FEDERAL REVENUES AS A PERCENT OF TOTAL REVENUES

Texas			Michigan		
	Fort Worth	56.7		Midland	4.5
	McCamey	86.4		Detroit	40.5
	Laredo	99.0		Manistique	11.1
				Muskegon Hts.	23.9
North Carolina			Florida		
	Winston Salem	60.4		Ft. Lauderdale	9.1
	Kinston	32.2		Miami	28.9
	Sylva	15.5		Quincy	90.0
	St. Paul's	20.7			
Illinois			New Jersey		
	Glenview	9.6		Maplewood	12.2
	Bloomington	31.0		Wayne	0.0
	Rockford	20.3		Fair Lawn	9.0
	Chicago	49.7		Newark	81.7
	East St. Louis	80.6		Vineland	87.0
New York			California		
	White Plains	82.6		Palo Alto	26.4
	Niagara Falls	38.8		Los Angeles	33.8
	Newburgh	10.0		Sacramento	19.2
				Oakland	9.3
				Stockton	6.5
Maine			Mississippi		
	Presque Isle	28.7		Meridian	76.1
	Portland	19.8		Houston	82.4
	Van Buren	47.4		North Carrolton	90.0
	Biddeford	55.6			

2. While there is not a one-to-one relationship between the concept of private (as opposed to social) demand and the concept of consumption (as opposed to investment) there is a tendency for communities which emphasize giving courses in response to private demand to provide a larger proportion of consumption courses. (See Table 5-5)

TABLE 5-5

RELATIONSHIP BETWEEN REVENUE SOURCE AND CURRICULUM EMPHASIS

	Communities Emphasizing Private Demand		
Community	*% Rev. Local*	*% Rev. Federal*	*% Courses Consumption type*
Manistique, Mich.	88.9	11.9	44.2
Maplewood, N.J.	87.8	11.2	66.7
Wayne, N.J.	80.7	0	61.5
Fair Lawn, N.J.	80.3	9.0	46.6
Glenview, Ill.	89.6	9.6	50.9
	Communities Emphasizing Social Demand		
Community	*% Rev. Local*	*% Rev. Federal*	*% Courses Consumption Type*
Laredo, Texas	0	99.9	0
East St. Louis, Ill.	0	80.6	0
White Plains, N.Y.	17.4	82.6	21.6
Quincy, Florida	5.0	90.0	0
Newark, N.J.	14.2	81.7	25.9
Vineland, N.J.	8.2	87.0	13.9
North Carrolton, Miss.	5.0	90.0	0

3. There is a relationship between the educational level of the community and the emphasis on social as compared to private demand for education. Communities with a higher educational level have a high expressed private demand for adult education services. Communities with a low educational level have a low expressed private demand and a relatively high social need. Federally funded programs tend to be directed toward these kinds of communities. (Table 5-6)

In summary, our data support the hypothesis that demand for adult education courses is elastic with respect to income. However, demand varies according to whether courses constitute primarily investment or consumption. Demand for investment-type courses appears to be higher among the young, and in communities characterized by a low level of education. Low income people prefer courses which will upgrade their job and income classification. People with higher

TABLE 5-6

RELATIONSHIP BETWEEN EDUCATIONAL LEVEL OF COMMUNITY AND CURRICULUM EMPHASIS

Community	*High Educational Level (Median Yrs. School Completed)*	*% Local Rev.*	*% Fed. Rev.*	*% Courses Consumption Type*
Maplewood, N.J.	13.7	87.8	12.2	66.7
Palo Alto, Calif.	13.3	60.8	16.9	39.0
Wayne, N.J.	13.0	80.7	0	61.5
Midland, Mich.,	12.7	42.4	4.5	21.1
Glenview, Ill.,	13.0	89.6	9.6	50.9

Community	*Low Educational Level (Median Yrs. School Completed)*	*% Local Rev.*	*% Fed Rev.*	*% Courses Consumption Type*
Quincy, Fla.	9.7	22.6	90.0	0
Laredo, Tex.,	6.4	0	99.0	0
S.W. Tech, N.C.	7.9	0	15.5	5.6
St. Paul's, N.C.	7.9	0	20.7	13.1
N. Carrolton, Miss.	8.0	5.0	90.0	0

income and residents of communities with high education level appear to have a greater demand for consumption-type courses.

Some interesting findings appear with respect to sources of revenue. High education communities appear to demand consumption-type courses and to be willing to pay for them locally. Low income communities, on the other hand, have a high demand for investment-type courses, but these courses are largely supported by Federal funds.

Such considerations lead to a review of the manner in which curricular decisions are made, and the manner in which those courses which are selected are made available to clients. Curricular decisions are heavily influenced by state laws. We turn first to an examination of legislative regulations concerning adult education curricula.

THE PRODUCTION OF ADULT EDUCATION

Under this topic, we include (a) decisions concerning what is to be taught and (b) decisions about hiring teachers, providing space, and selecting equipment and materials. We turn first to state level curricular decisions and then to local decisions.

State Regulations of Curricula

Some state statutes provide quite comprehensive statements regarding the kinds of curricula which are appropriate for adult and continuing education. The relevant title in the Illinois State Code, for example, reads as follows:

(a) Adult and Continuing Education: Organized, systematic instruction and related education services, for students enrolled in a program conducted by a publicly supported educational institution. Such students are beyond compulsory education age, not currently enrolled in a regular elementary or high school, and are not seeking junior college or college credit toward an associate degree or degree. The instruction may be full-time or part-time for the purpose of providing students or groups with opportunities for personal improvement and enrichment, preparation for effective participation as citizens (including English for foreign speaking individuals), family life and parent education, elementary and high school education, for which credit may be granted toward diploma requirements, occupational and technical training and retraining.[5]

The Florida code provides priorities, but also excludes so-called "recreational" kinds of courses from receiving state support.

(1) Priority in the use of minimum foundation program funds shall be given to programs of literacy, elementary and secondary education, and to those courses of an academic nature which will contribute to the general educational needs and cultural development of post high school young and adults. Only those shall be approved for use of adult education instructional units. No adult class or course which is primarily recreational in nature shall be approved for the use of minimum foundation program funds.[6]

The New York statutes contain a similar proscription:

(1) Expenditures will not be approved for social and physical recreation, sports, games, amusements, entertainment, or for

> courses which have limited educational objectives, except when conducted for adults 60 years of age and over.[7]

Where state funds are used, the state feels an obligation to guide the manner in which these funds will be spent. For courses paid for in large part from tuition, state laws tend to be less restrictive. The New Jersey statutes, for example, provide that the local Board of Education shall determine the courses which are to be offered with the approval of the State Department of Public Instruction. These statutes further provide that any district offering adult education courses may charge tuition for them to those residents in the districts, and to persons received from other districts, provided such tuition does not exceed the actual cost per student.

Local Curricular Decisions

Basic to the production of adult education are decisions about what courses or programs (services) shall be offered. The curriculum or the total set of services constitutes the product of the adult education industry.

Elementary and secondary school systems produce very diverse sets of educational services. The system in Dade County, Florida, provides some 550 different courses. In contrast to this breath-taking array of offerings, only four different courses were identified in Quincy, Florida, and only one in McCamey, Texas.

How are decisions made about these courses? Where state or local tax revenues are available, directors of adult education, sometimes with the help of advisory committees or boards of education, may survey the "needs" of a community and provide courses to meet those needs. Many adult education programs are responsive to the interests of individuals, as opposed to perceptions of "social needs".

Directors of adult education programs were asked to state the basis upon which they made decisions about the addition of courses. The majority of directors cited both social need and private demand as the basis for the decision. Changes in state funding also affect program decisions, as evidenced in one director's statement:

> New high school diploma courses were added this year because the State will now subsidize these up to 75% instead of 50% as was the case last year.

Several "high average" level of education communities placed an almost exclusive emphasis on private demand as the basis for deciding to provide courses. The following statement is typical of this approach:

> Our most recent additions were to broaden the curriculum for those in our credit program. Also, we poll those enrolled to see what new courses we should consider offering. The local citizenry is asked to call the local director and suggest courses of their choice.

At the other extreme, some communities (typically of lower educational attainment) placed exclusive emphasis on social need as the basis for adding a new course:

> An effort is made by the Director to ascertain what courses shall be offered. A number of courses are repeated periodically which have been previously requested by outsiders. Federal monies may prompt a program. i.e. Adult Basic Education could have such a program already recognized by the Director but it had not been offered because of lack of local funds. The evidence of this is the fact that a closely related program, the GED program, was already in operation at the time of the initiation of Adult Basic Education. Occasionally programs may be initiated upon the recommendation of State agencies. An example of this is the series of management programs that were begun at the suggestion of the Distributive Education division of the State Department of Education.

As for the decision on whether to retain or increase the number of sections of a course in the program, a general procedure used by many directors involves what might be termed a "warm seat index." Courses which consistently attract enrollees will be retained and perhaps be offered in more sections or variations. But classes in which few of the seats are warmed are likely to be dropped from the next program schedule. This kind of rapid response to "feedback" from clientele is unique to adult schools among public educational institutions.

Nature of Inputs in Adult Education

1. *Use of School Facilities.* Almost any evening of the week in most

communities the doors will be open and the lights will be on in one or more of the public school buildings, with the desks occupied by parents or neighbors of the day-school pupils and with some of the regular day-school teachers at the front of the classroom. Such is the most common form in which public school adult education takes place in the U.S., but by no means is it the only form. In some communities, such as White Plains, New York, adult education is housed in a separate building used exclusively for that purpose, and a full daytime as well as evening schedule is offered. Elsewhere, decentralized locations, such as community centers or storefronts, may be emphasized, with the aim of making adult education more convenient and also perhaps less like "school." Junior colleges, rather than elementary and secondary schools, are the main locus of public adult education in some communities and states.

There is considerable variation in the extent to which such production of adult education services is contained within the physical and human resources of the public schools, but the overwhelming tendency is for classes to be held in the regular day school buildings of the local system, and, to a somewhat less extent, for teachers of adults to be drawn from the certified teachers of children.

The main reason for the use of school system buildings is clear: money is thought to be saved by doing so. Schools are relatively specialized structures which might otherwise have little alternative use in the evening, and which consequently are both well-suited to the purpose of adult education and available at low opportunity cost. In addition, evening school students cause little in the way of wear and tear to buildings and equipment. Finally, school boards already have control over the use of school premises, so the cost of locating and contracting for space and equipment elsewhere is eliminated, as is of course the rent which would have to be paid for them.

The production of adult education services in most communities depends heavily on "in-kind" support of this nature from the local school board. Courses are thus made available at a lower level of expenditure than would be required if the program had to exist independently of the school system. Carl W. Simmons, Director of Adult Education in Vineland, New Jersey, emphasized this point in a letter to this project:

> Although your survey is primarily concerned with cash revenues, paramount to the success of adult education locally has been in-kind contributions for the implementation of adult programs.

and in South Orange-Maplewood, New Jersey:

> The adult school pays no rental to the Board of Education. The Board of Education's contribution (free) to the adult school is facilities, use of equipment, janitor's services, heat, light, and power.

and in Presque Isle, Maine:

> The program is operated out of the general fund. No separate charges to the adult program.

Similar responses were given by many other directors in our sample.

In some districts, however, charges for use of space, equipment, utilities, and maintenance are assessed to the adult program. In Van Buren, Maine:

> There is no fixed percentage. This year it comes up to 1.2% of the entire (adult education) budget.

while in Detroit, Michigan:

> The charges assessed by the school district for the Adult Education Program vary for each specific phase of the program and average about five percent of the instructional and administrative costs. There is no fixed percentage charged for overhead, it also varies with program needs.

2. *Teacher Selection.* In many systems in our sample, a list of more or less objective criteria was indicated as the basis of the teacher selection process. Typical of such criteria are these:

Knowledge of Subject
Interest in Teaching Adults
Certification Credentials
Background and Experience
Character

Broward County (Fort Lauderdale) Florida, elaborates on these criteria as follows:

> Teachers are selected strictly on their qualifications for the course to be taught. They must meet state and local certification requirements. They are identified by application, by observation, by referral, by recruitment, by publicity. They are recommended to the Director by the appropriate program supervisor or coordinator. They are also approved by, and placed on the payroll by, school board action. There is no seniority or other system involving preference or precedence. We try to get the best possible teacher available for each position.

South Orange-Maplewood, New Jersey abbreviates the list in this way:

> The only criteria are:
> 1. Do they know, and
> 2. Can they teach?

The criterion of certification is open to most of the same arguments directed toward teacher certification in general, and will not be analyzed here. Certification can be either a state or local requirement, or both, but in either case the requirement can usually be circumvented when desired through a device of temporary certification for a period up to a year, or by a variety of other expedients. A certification requirement becomes increasingly problematic as the range of program offerings is increased. As the courses become less like those of regular elementary and secondary school and as the number of "consumption" courses in particular increases, the likelihood decreases that the teacher who meets the usual organizational criteria will also be certified.

Teachers who are to be selected by any criteria, however, must first be attracted, and this raises the important question of wage and salary policies. A content analysis was made of replies to open-ended questions concerning wage policies for adult courses, according to indications of relative flexibility or inflexibility accorded to directors in the wages paid for given courses. These ratings were paired with the percentage of consumption-type courses offered in the district's program. Junior College and college course offering districts were omitted, except in North Carolina, where junior colleges are the main focus of adult education. The following table resulted:

TABLE 5-7

PERCENTAGE OF CONSUMPTION-TYPE COURSES IN THE PROGRAMS OF DISTRICTS WITH RELATIVELY HIGH AND LOW FLEXIBILITY IN SETTING WAGES

Districts With Relative Flexibility in Setting Wages		*Districts With Relative Inflexibility in Setting Wages*	
District Code No.	*Percentage of Consumption-type Courses in District Program*	*District Code No.*	*Percentage of Consumption-type Courses in District Program*
62	67	61	47
65	62	43	44
24	51	83	29
21	40	63	26
03	39	22	23
25	34	04	23
		31	22
		73	22
Mean % = 48.8		75	22
		42	17
		05	17
		34	14
		64	14
		85	13
		11	11
		72	11
		35	9
		82	6
		33	4
		84	3
		51	0
		91	0
		93	0
		94	0
		45	0
		13	0
		Mean % = 14.5	

Thus, in the districts reporting to this study, the autonomy of the director in setting the wage to be paid to a particular teacher for a particular course appears to be strongly related to the presence of a high proportion of category three ("consumption") courses in the program offerings. The private demand for consumption courses is positively related to the level of education and income characterizing a community. Hence, a director who wants to provide these courses to a clientele which desires and is able to pay for them is evidently better able to do so when he has some flexibility in bidding for teaching talent.

Tuition

The tuition (enrollment fee, etc.) represents the *price* of a course from the point of view of the client, but of course not the total *cost* of taking a course, which includes in addition to tuition and fees the opportunity cost of the time of the student while in class, while doing any homework entailed, and while traveling to and from class, as well as expenditures for materials, transportation, or child care.

A sample of tuition-paying students enrolled in courses surveyed by the present study were asked if they would be willing to pay twice the tuition they had paid and a majority indicated they would be willing to do so. The question and responses are as follows:

> "If the tuition cost or student fee for this course were twice as much, would you have enrolled for this course?"
> NO: 207 (36%) YES: 365 (64%)

This apparent difference between those enrolled and not enrolled in willingness to pay requires closer analysis. The clientele presently enrolled and surveyed by this study included, in addition to the above tuition-paying segment, 248 students enrolled in "free" courses. Since it is not meaningful to ask persons paying nothing if they would pay twice that amount, could it be that the students enrolled in free courses are similar to those in the Johnstone and Rivera study who found cost an obstacle to attendance? In other words, does tuition (as a part of total cost) have its greatest impact on lower income groups?

The highest incidence of tuition-free courses is among basic skill and vocational programs subsidized by the Federal and state governments. Courses which meet individual consumption purposes rather than pressing social needs tend to be tuition courses. In addition, there are courses offered in many districts which meet individual investment purposes, and these tend to be tuition courses. The following tables developed from data obtained in this study illustrate these relationships.

Table 5-8 shows a slight but not overwhelming tendency, especially at the extremes, for consumption courses to be associated with high proportions of tuition to total local expenditures. There are a few districts in which courses of all kinds are free, and some in which only Adult Basic Education is free. The range in between reflects the variety of philosophies and *ad hoc* practices which co-exist concerning the extent to which adult education should be supported with public money.

TABLE 5-8

TEN HIGHEST AND TEN LOWEST RANKING DISTRICTS* BY TUITION AS A PERCENTAGE OF TOTAL EXPENDITURE

	District No.	*Tuition as Percentage of Total Expenditure*	*Percentage of Program Courses of Consumption Type*
HIGHEST	24	85	51
	61	82	47
	62	79	67
	65	73	62
	44	35	21
	25	33	34
	72	21	11
	37	17	14
	43	16	44
	73	16	22
LOWEST	75	05	29
	65	05	14
	63	05	26
	35	05	9
	04	04	23
	22	03	23
	02	03	0
	51	0	0
	45	0	0
	23	0	0
	94	0	0

*Exclusive of Junior Colleges

Table 5-9 can be interpreted as follows: districts which offer mainly investment courses typically have a narrow range of total program offerings, chief of which are the subsidized basic skills courses. Hence tuition in such courses is low, on the average. Districts which, on the other hand, offer a lower percentage of investment courses do so because the total range of offerings tends to be wider, including a number of non-subsidized investment courses for which full tuition is charged, raising the average investment course tuition in that district.

TABLE 5-9

PERCENTAGE OF CURRICULUM DEVOTED TO INVESTMENT COURSES AND AVERAGE INVESTMENT COURSE TUITION

50 % or more Courses Investment Type		*Less than 50 % Courses Investment Type*	
District No.	*Average Tuition Investment Courses*	*District No.*	*Average Tuition Investment Courses*
02	$ 3.16	03	$ 1.46
05	.30	04	0
11	2.62	21	9.95
13	0	24	26.90
22	0	25	14.40
23	0	43	1.00
31	4.23	55	13.55
33	4.47	61	21.59
34	4.17	62	12.13
35	1.88	65	37.08
42	15.11	73	5.21
45	0		
51	0		Mean = $13.02
63	11.59		
64	5.93		
72	0		
75	10.20		
82	6.61		
83	0		
84	4.37		
85	10.32		
91	7.50		
93	0		
94	0		
	Mean = $4.08		

We assume that these considerations affect the decisions of public policy makers as well as of individuals who enroll in adult education courses. Members of Congress, state legislators, and local school board members take into consideration both the investment and the consumption aspects of adult education. In particular, there is wide variation in the state laws which permit and regulate programs of adult education. Since these laws provide the context within which school board members, administrators, and potential enrollees make their decisions, we have examined them in some detail.

ADMINISTRATION OF ADULT EDUCATION

State Constitutional and Legislative Provisions

An examination of state legislation shows a wide divergence in attitudes and policies with respect to adult education. The range is from enthusiastic endorsement to neutrality and apparent opposition. Such variations at the state level clearly affect the programs which are offered by local school systems.

An example of a very favorable attitude toward education for adults is found in the following legislation for the State of Florida:

> 130-6.12 . . . The organization and administration of local adult education programs shall be such as will assure that the kind and extent of general education services needed by adults in the community shall be identified and provided in an effective and economical manner . . .[8]
> 130-6.13 . . . The general adult education program in a county shall be developed and periodically adjusted on the basis of systematic and continuing study of the community and of its people.[9]

A somewhat briefer statement is contained in the Public School Laws of the State of Maryland:

> Article 77 # 52 Schools for Adults
> The county board of education, in accordance with the rules and regulations of the State Department of Education, may establish and maintain day and evening schools for adults, the purpose of which shall be to provide a general program of continuing education in all its aspects for the improvement of the civic, vocational, and general intelligence of adults, and to enable them to make a wide use of their leisure time.[10]

The laws of Utah are quite specific with respect to adult education:

> Section 9-2-4 (b) Subjects:
> Every district school board of education in this state may raise and appropriate funds for adult education, determine fees to be levied, if any, and through its superintendent may hire teachers, establish and maintain classes for adults in En-

> lish, the fundamental principles of democratic government, citizenship, public affairs, workers' education, forums, arts and crafts, general cultural subjects, adult recreation and other subjects as the state board of education may agree upon . . .[11]

The school laws of Mississippi also authorize a wide variety of courses of adult education:

> #6240. Adult Education — That the state board of education be authorized and directed to prescribe rules and regulations under which a program may be established, maintained, and supervised for the purpose of supplying educational advantages to adults. The aim and purpose of such a program shall be to reduce illiteracy and to provide a general plan to continuing education in the fundamental principles of a democratic society, citizenship, public affairs, forums, home and family life, arts and crafts, leisure time activities, general cultural subjects, and such other subjects as the state board of education may prescribe for the social and economic advancement of adults.[12]

At the other end of the continuum, certain states have no legislation whatever governing the provision of adult education.[13]

These legislative provisions must be considered in the context of Federal-state-local financial support and encouragement for adult education. However, while the relationships among the three levels of government and the support of elementary and secondary education have been quite clearly established, the situation is much more complex in the case of adult education. In a number of instances, the state appears to be a passive partner—either an implementer of Federal programs, or a legitimizer of local programs. One result of this situation is that in many instances, state governments are without full knowledge of the magnitude and nature of local educational programs.

Our research suggests that the field of adult education is most active when the state is an active participant in the process of defining needs and suggesting programs to deal with them. A state staff which is knowledgeable about the field, and which is able to provide advice and financial assistance in the development of local programs would appear to be a pre-requisite to the development of well-rounded curricula related to social needs and private demands.

In a number of states, however, Federal involvement in adult education has grown much more quickly than a qualified, informed state and local leadership. Some states act as administrators of federally financed vocational and literacy programs, rather than as state planning agencies. We now turn briefly to a description of one of the major Federal programs, that involved in the provision of Adult Basic Education.

State Administration of Adult Basic Education

All states participate in the Adult Basic Education Program, as do many U.S. possessions — Puerto Rico, Virgin Islands, Guam and Samoa. Even Kansas, which has a state law *against* providing state funds for adult education has the program, relying entirely on local school districts to provide the 10 percent matching funds required for participation.

Federal support for Adult Basic Education is especially important at the state level because, as of 1968, 23 states of the 50 appropriated no funds for adult education purposes. The majority of these states would not be involved in adult education in any meaningful way were it not for the funds provided under the Adult Basic Education Act. The act allows states to use a part of the Federal funds for state administrative purposes. In many states, this administrative allowance provides funds to employ at least one person or a small staff to assume responsibility for adult education at the state level. Finally, by providing an administrative allowance for all participating states, it creates one or more "selling" positions at the state level. In many states, these are positions which did not exist before the legislation and would not exist except for the legislation. These positions are filled by people whose role includes attempting to increase the preference level of potential consumers through state level participation in adult education.

These states are predominantly southern or sparsely populated. Exceptions to this are Kansas, which has a state law against providing state funds for adult education, Massachusetts, Missouri, and Oregon. One can conjecture that for some of the above states there exists a scarcity of public resources which precludes further state financial participation in adult education. In the sparsely populated states, problems resulting from the absence of state financial participation may not be as severe as they would be in the more urban oriented, highly populated, and industrialized states of the nation.

Following are those states which participate in adult education almost solely through the administration of the Adult Basic Education Act of 1964 and subsequent admendments:

1. Alabama
2. Alaska
3. Arizona
4. Colorado
5. Georgia
6. Idaho
7. Kansas
8. Kentucky
9. Louisiana
10. Massachusetts
11. Mississippi
12. Missouri
13. Montana
14. Nebraska
15. Nevada
16. New Hampshire
17. New Mexico
18. North Dakota
19. Oregon
20. South Dakota
21. Utah

High School Completion Courses

One of the most common state-endorsed programs is that related to the completion by adults of a high school program. A number of states provide financial support for adult education at the secondary level for high school completion programs. Following are the states which support high school level courses with funds provided by state governments:

1. Arkansas
2. California
3. Delaware
4. Florida
5. Hawaii
6. Illinois
7. Indiana
8. Iowa
9. Maine
10. Maryland
11. Michigan
12. Minnesota
13. New Jersey
14. New York
15. Pennsylvania
16. Rhode Island
17. South Carolina
18. Tennessee
19. Virginia
20. Washington
21. Wisconsin

Almost all states now handle the administration of the national General Education Development (GED) test which determines whether an adult has reached an educational development level equal to that of a high school graduate. The student who passes this test receives a high school equivalency certificate, regardless of his formal educational history (Table 5-10). Some states bear the cost of administering this test while others pass the cost (usually about $10)

TABLE 5-10

1968-69 ENROLLMENTS FOR ADULT EDUCATION PROGRAMS BY LOCAL SCHOOL SYSTEMS*

	ABE Grades 1—8	*High School Diploma (9 - 12)*	*High School Equivalency*	*Americanization and Citizenship*	*Business and Commercial*	*General*
Ala.	11,164	-	-	-	-	-
Alas.	1,000	200	1,181	65	645	2,341
Ariz.	4,320	143	1,108	629	3,110	24,395
Ark.	6,122	-	4,000	-	3,655	26,800
Calif.	45,000	350,000	-	100,000	200,000	200,000
Colo.	3,860	2,793	788	672	13,054	80,917
Conn.	10,767	10,069	5,755	2,053	11,344	39,988
Del.	997	1,394	111	1,669	1,005	12,353
D.C.	2,273	6,100	2,300	969	2,000	10,000
Fla.	52,947	68,881	29,746	1,668	-	59,665
Ga.	17,825	-	5,191	-	-	-
Hawaii	8,712	12,209	-	642	-	7,716
Idaho	1,669	-	-	-	-	na
Ill.	25,314	58,793	6,880	13,442	-	92,756
Ind.	5,616	34,019	1,191	87	9,901	22,204
Iowa	5,232	1,221	13,192	-	-	42,692
Kans.	2,357	120	1,900	260	-	58,007
Ky.	8,641	-	9,000	29	-	-
La.	13,438	11,080	-	-	-	-
Me.	1,431	2,296	1,126	125	2,088	14,878
Md.	5,943	-	7,685	-	-	33,241
Mass.	6,639	-	14,196	6,791	-	-
Mich.	13,211	100,363	-	2,764	32,921	274,019
Minn.	2,456	3,240	4,562	-	7,550	144,473
Miss.	9,354	271	704	-	372	59,062
Mo.	7,135	.	1,765	300	6,802	43,205
Mont.	846	-	-	-	-	-
Nebr.	1,740	720	866	130	2,474	16,875
Nev.	1,400	4,757	796	125	1,922	23,607
N.H.	1,024	45	352	95	1,175	2,700
N.J.	7,781	5,371	21,365	8,610	30,120	348,297
N.M.	3,294	-	250	70	-	-
N.Y.	46,183	62,440	33,038	28,705	49,507	293,398
N.C.	31,328	10,236	3,225	-	-	-
N.D.	691	-	-	-	-	-
Ohio	12,739	-	-	-	-	-
Okla.	8,959	-	3,486	-	-	-
Oreg.	2,200	1,800	12,000	-	-	-
Pa.	20,290	22,603	-	3,571	21,134	79,958
P.R.	27,520	28,000	-	-	-	-
R.I.	2,217	142	1,247	1.048	-	-
S.C.	13,164	20,719	1,858	-	-	1,550
S.D.	1,115	87	908	42	311	11,221
Tenn.	14,304	-	900	14,304	-	-
Texas	47,000	7,500	20,743	1,800	-	1,850
Utah	1,667	12,638	-	315	688	13,362
Vt.	2,020	-	-	-	-	4,000
Va.	10,761	10,167	894	314	3,966	10,333
Wash.	4,149	-	-	Not rp.	-	-
W. Va.	10,195	-	4.114	Not rp.	2,525	-
Wis.	3,400	3,600	-	1,694	-	48,500
Wyo.	954	300	407	100	200	2,665
U.S.[1]	550,364	854,317	218,830	193,088	408,469	2,107,028

*Based on most recent estimates submitted to NAPCAE by State Departments of Education.

[1] Includes D.C. and Puerto Rico.

on to the student. Other states, most of those listed above, pay all or part of the costs of educational programs for students who either wish to take the G.E.D. test or to take the courses which lead to a regular high school diploma.

A number of states have provided data which show the actual level of state support for high school completion programs for 1968-69: (Table 5-11)

TABLE 5-11
STATE SUPPORT OF HIGH SCHOOL COMPLETION COURSES

State	*Amount*	*State*	*Amount*
Arkansas	$ 75,000	Maryland	$ 58,727
Delaware	120,000	Minnesota	170,000
Illinois	535,000	New Jersey	643,000
Iowa	347,000	So. Carolina	695,000
		Virginia	120,000

Many states have financial support programs which make it difficult or impossible to determine the actual level of funds provided for high school completion courses. The costs of these programs are often "hidden" in the total elementary-secondary education costs.

State Aid for Adult Education

The responsibility which states assume for the financing of adult and continuing education varies considerably across the United States. There are a number of states in which state responsibility is limited to the administration of Federal programs, including those in the area of vocational education and adult basic education. In other states, there are state fiscal procedures by which costs are shared between the state and local districts.

A variety of procedures are used as the basis of determining the state's share of the costs of providing adult and continuing education in a given community. The main categories of sharing procedures are the following:

1. Foundation Programs
2. Flat Grants
3. Cost Sharing
4. None. State administers ABE programs

Foundation Programs. A foundation program is one in which the state shares costs up to a given sum of money. The method of sharing is typically based on an "equalization" formula which permits the poorer districts (defined in terms of some criterion of local taxpaying ability) to receive more state money than the richer districts.

A. *California.* The relevant statute reads as follows:

> *17951.* The allowance for each unit of average daily attendance during the fiscal year for adults, as adults are defined in Section 5756, shall be as follows: (a) For high school districts the allowance shall be three hundred fifty dollars ($350) less the product of fifty cents ($0.50) multiplied by each one hundred dollars ($100) of the assessed valuation of the district per unit of average daily attendance exclusive of adults. (b) For each unit of average daily attendance attached to a junior college the allowance shall be five hundred twenty dollars ($520) less the product of twenty-four cents ($0.24) multiplied by each one hundred dollars ($100) of the assessed valuation of the district per unit of average daily attendance exclusive of adults.
>
> The allowance provided by this section for each unit of average daily attendance of an adult, as an adult is defined in Section 5756, not residing in the district and not residing in any district maintaining a junior college shall be limited to one hundred twenty-five dollars ($125) as basic state aid and no allowance shall be made based on state equalization aid. The total of basic and equalization aid allowed each district shall not be less than one hundred twenty-five dollars ($125) for each unit of average daily attendance during the fiscal year for resident adults, exclusive of average daily attendance in classes for inmates of any state institution for adults and for inmates of any city, county, or city and county jail, road camp or farm for adults.
>
> If any computation made under any of the preceding paragraphs of this section produces an allowable amount not in excess of one hundred twenty-five dollars ($125) per unit of average daily attendance, such allowable amount computed shall be adjusted if, and to the extent necessary, so that the actual allowance shall not exceed one hundred twenty-five dollars ($125) per unit of average daily attendance of the adults in high schools and junior colleges during the preceding fiscal year.[14]

B. *Florida.* State aid in Florida for adult education is included in the basic support program. The amount to be provided is determined on the basis of the number of instructional units, with the number of allowable units being calculated as follows:

> One instructional unit shall be allowed for each additional qualified teacher employed for a full-time load, or the equivalent, as prescribed by regulations of the state board, provided the minimum class size for a full instructional unit shall be not less than fifteen students in average daily attendance; a proportionate fraction of a unit shall be allowed in accordance with regulations prescribed by the state board . . .[15]

The amount to be paid by the state to the district is based on the qualifications of instructional personnel, and a state support scale. A local contribution is determined on the basis of a stated local tax levy. Thus, this program, like that of California, contains an equalization feature.

C. *Pennsylvania.* Reimbursement for local school district expenditures for adult education in Pennsylvania is included in the state's "Basic Instructional Subsidy", which reimburses school districts for their costs of Administration, Instruction, Attendance Services, Operation of Plant, Maintenance of Plant, Fixed Charges, Food Services, Student-Body Activities, and Community Services. The net total expenditure for all the above mentioned categories is reimbursed by the Commonwealth according to an Aid Ratio figure established for each of the school districts. The expenditures made by a school district for Adult or Continuing Education are listed, under the appropriate categories, on the Pennsylvania Annual Financial Report along with all of the expenditures made by the school district in each of the categories for their regular day school program. The category expenditures are totaled and then divided by a Weighted Daily Membership (Pupils) to determine an Actual Instructional Cost per pupil. The Commonwealth will reimburse, according to the Aid Ratio, up to a maximum Actual Instruction Cost per pupil of $550. The Aid Ratio figure is based upon Market Value and Pupil Population in the school district as compared to the Market Value and Pupil Population for the State. The Aid Ratio averages to 50% for the entire State with some school districts receiving as much as 90% reimbursement while others receive as little as 10%. The reimbursable costs for Adult or Continuing Education would include any and all expenditures made for these programs. The expenditure to be made for these programs is determined by the local school board.

Flat Grants. A flat grant is based on some criterion such as attendance or membership. Reimbursement on a flat grant basis does not take into consideration the taxpaying ability of the local school district. The following states provide reimbursement to school districts for adult education programs on a flat grant basis:

State	*Basis for Payment*
Arkansas	$5.00 per hour of instruction
Connecticut	12 cents per pupil clock hour plus ½ the salary of the local director of adult education (state grant for the local director not to exceed $2,500)
Illinois	$3.50 per 40 minute period of instruction
Iowa	93 cents per equivalent contact hour
Maryland	Distributed on the basis of adult population, with no school system receiving less than $1,500.

Cost Sharing. Cost sharing implies that the state pays the local school system some portion of actual costs. The method of calculating costs, as well as the portion to be paid by the state, varies a great deal.

State	*Basis for Payment*
Connecticut	State pays ½ of the salary of the local director of adult education
Maine	State pays 70% of cost of high school diploma courses
New Jersey	State pays ⅔ salary of full and half-time directors, and reimburses on a matching basis for Americanization courses
Rhode Island	Local communities are reimbursed at a minimum of 30% of expenditures
Virginia	Reimbursement of instructors' salaries at the rate of 60% up to $5 per hour of instruction within the appropriation available
Wisconsin	State aid to approximately 16.5 per cent of cost per full-time equivalent student is paid for part-time adult programs which are aided.

The above tabulation is not intended to be exhaustive. It does, however, illustrate the diverse ways in which states support adult education programs. There are, in addition, a number of states which do not support adult education programs.

These government policies affect the "supply" of adult education activities. Supply, in turn, interacts with demand, and the two factors together determine the nature of educational offerings and the degree to which they are utilized. We now turn to an examination of some of the implications of this discussion.

FINDINGS AND IMPLICATIONS

This section deals with the implications of the study for fiscal policy. We again emphasize that adult and continuing education in the United States is a many-faceted set of activities, provided in numerous contexts and paid for in many ways. Furthermore, there is no single set of "best" solutions to problems of providing adult education. Rather, there are many possible trade-offs, between public and private institutions, among governmental agencies, among governmental levels, and even between adult education and education at the elementary-secondary level.* In this context, simple cost projections are, in our opinion, inappropriate.

More useful than a set of solutions is an attitude toward making education available for adults. We believe that commitment to the concept of lifelong learning, shared by governments, private institutions, and individuals, is essential for the survival of our economic and political institutions, as well as for the well-being of individuals. Such a commitment has been obtained in the case of elementary and secondary education; it is being reached at the preschool and junior college levels; its extension to the education of adults is a logical next step.

The Provision of Adult Education

This study has examined adult education provisions in about 40 school systems, in ten states. The picture which emerged is one of great diversity. Opportunities for adults to pursue their education are differentially available, according to both the state in which they live, and the community of residence.

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* In some countries, the education of adults might be a better investment than the education of children. Some thought has been given in our country to the possible advantages of teaching low income mothers to teach their children.

This diversity is important in itself. It also permits inferences to be drawn about the supply and demand of courses for adults. These inferences are, in turn, useful when we turn to questions of public policy.

Demand by Adults for Educational Services

Demand for such services may take two forms. First, there is the demand which people express for services for themselves. There is, second, a demand for services for others. The latter constitutes public demand. Present trends in appropriations and enrollments in certain Federal programs suggest that public demand for adult education (as interpreted and implemented by Congress) is increasing (Table 5-12).

TABLE 5-12
ENROLLMENT IN ADULT BASIC EDUCATON PROGRAMS IN SELECTED YEARS

Year	*Enrollment*
1965	37,991
1966 (fiscal)	377,660
1967	388,935
1968	455,730
1969	532,000

Similar evidences of increasing public demand for adult education may be found in the field of Federal job-related programs.

In general, our findings concerning private demand for adult education courses have conformed to our expectations. First, such demand is elastic with respect to income; in general, individuals with higher income (and high income communities) exhibit a greater demand for adult education than do individuals (or communities) with lower income. Such findings are congruent with previous research.

Second, there is an inverse relationship between price (as indexed by tuition costs) and enrollment. This relationship cannot be studied apart from other factors. On a cross sectional basis, the effect of income and other socio-economic variables clouds the relationships, since high tuition communities are also high income communities, in many cases. Some longitudinal data are available, suggesting that when tuition fees are eliminated (for high school completion courses), enrollments immediately increase.

Third, variables associated with "preference" also seem to affect demand. In particular, individuals who have a higher level of education tend to demand more adult education services. With due respect to the possibilities of the "ecological fallacy" manifesting itself, evidence of this relationship also appears in our study of educational systems. Communities with higher levels of education tend, on the average, to show a greater demand for adult education.

These relationships become more complex when we consider that adult education is not a homogeneous set of services. For some people, such programs constitute an investment in increased income and better job opportunities. Other programs provide a set of gratifications which are more immediate for those who enroll in them; such programs are related to consumption rather than investment.

In general, it is quite clear that courses for which a public demand is manifested are an investment in people. Some states, including, for example, California, prohibit granting state aid for courses which are largely social or recreational. Federal programs are largely directed to job training and literacy education. The benefits of these programs fall, for the most part, into the investment category.

In the area of private demand, some clear trends may be seen:

1. When low income people enroll in adult education courses, their major motivation appears to be investment. High income people show a greater preference for consumption — at least in courses taken in public school systems.

2. Younger people emphasize investment. Older people tend, in general, to place more emphasis on consumption.

3. The effect of sex on preference patterns is mixed. Females earning less than $9,000 tended to place a much greater emphasis on consumption courses than did males in the same income brackets. However, the definition of consumption and investment becomes blurred in the case of women who see their career as home-making.

4. It would appear that low income people are very sensitive to price. However, a fairly large proportion of our respondents (at all income levels) said they would still enroll in their course if the tuition level were doubled. It is possible that non-tuition costs (such as transportation) fall most heavily on low income enrollees.

In the field of adult education, supply and demand are closely inter-related. To a considerable degree, the supply of appropriate courses is responsive to demand. Many adult educators conduct "market surveys" to determine what courses are "demanded" in their communities; such courses are then supplied. On the other hand, demand is affected by supply. When Adult Basic Education courses are provided, a large demand, previously latent, becomes manifest. There are, however, many imperfections in this supply-demand relationship, such as:

1. Imperfect information. Many people do not enroll in courses because they do not know that they exist. Adult educators, however competent, probably lack complete information about demand in their community or state.

2. Effect of price. The cost of attending adult education courses will affect enrollment. Even where a public need is being met, and where tuition is at a low level, the costs of transportation and of foregone income may prevent individuals from attending.

3. Personnel shortages. Some courses which are in demand are not offered because appropriate teachers are not available. Teacher shortages are related to teacher salaries. State constraints on the salaries which may be paid to adult education teachers may help produce this shortage.

Costs of Providing Adult Education

One of the major objectives of the National Educational Finance Project is to identify cost differentials among various kinds of programs. While this objective has some merit in terms of the traditional day school program, it is less relevant in the case of adult education.

Adult education comprises a wide variety of activities. These activities cover the entire range of courses offered by elementary and secondary schools, as well as many college level courses. In addition, they include many vocational courses and numerous offerings of a more esoteric nature, related in some way to the interests and aspirations of adults.

Costs vary widely among these offerings. Some courses may be "warmed over" high school programs, offered by high school teachers to adults. In these cases, an hourly rate of salary of, say, $5.00 to $6.00 may comprise the major cost element. Costs per student hour will be quite different in a lecture on foreign affairs delivered by a professor from a nearby university to a group of, say, 150 adults. Quite different, again, will be the cost of a course in judo provided by an authority in that subject to ten housewives.

In spite of these problems, we venture some statements about costs in the area of adult education. We organize our discussion around the following topics:

1. Definitional problems
2. Cost differences related to methods of producing adult education
3. Cost differences related to the nature of a course or program

Definitional Problems. It is much more important in adult education than in elementary-secondary schooling to distinguish between public and private costs. Adults incur sizable private costs when they enroll in an educational program. These costs include transportation, and often child care expenses. They may be of sufficient magnitude as to make attendance impossible, even when no tuition is charged.

More subtle, but very important, are the opportunity costs associated with the time an individual spends attending classes. These opportunity costs may be measured in terms of the most attractive alternate use of the time. A professional person, who would otherwise spend his evenings keeping up with the literature in his field, brushing up on a legal case, or visiting patients, may find the opportunity costs so high as to preclude attendance at an adult education program. A blue collar worker who "moonlights" in order to make ends meet may find attendance too expensive, even when it might have long term economic advantages to him.

Another factor is the manner in which overhead costs are charged by school districts to adult education programs. It is common practice, as noted above, for a school system to attribute only incremental costs (above those incurred in the day school program) to programs in adult education. The overhead costs of building, equipment, and general administration may be charged to the day school program; the costs charged to the adult program become mainly salary and the additional heat, light, and janitorial services which are required.

A final, critical, factor is the quality and effectiveness of the services which are purchased. This is, in our opinion, a matter of central importance to the entire Project. To take an example outside the field of adult education, it is quite a different thing to say that the cost of providing education to handicapped children *is* 25 percent higher than the cost of educating "normal" children, than to say that this cost differential reflects an optional use of resources. To take another example, it appears to us irrelevant that the costs of educating inner city children are greater than the costs of educating suburban children if the urban educational systems are unsuccessful in preparing their graduates to compete in our society.

It would be virtually impossible to conceive of an input-output analysis of the entire range of adult education courses. Some aspects of the enterprise can, of course, be subjected to this kind of study; several analyses have, for example, been made of the costs and benefits associated with Adult Basic Education. Local adult education directors will also attempt to evaluate the courses which they provide. In addition, enrollees and potential enrollees will conduct their own cost-benefit analysis. Courses which have the reputation of being of high quality will attract students. Courses which are perceived as having overly high costs or inadequate benefits will be shunned. Even after students enroll in a course, they will tend to drop out, if they find the offering to be unattractive. The director will tend, over time, to drop the courses which are not demanded and to continue and even expand those which attract students and hold them throughout the term.

Such decentralized decision-making processes will also affect costs. If tuition fees exceed the students' perception of benefits, they will not enroll. Therefore, in those courses which are financed from fees, there is pressure to keep costs to a minimum. Since perceptions of benefits will differ from course to course, students will be willing to pay more for some courses than others. This may mean that the more highly demanded courses help provide revenue to support other courses which would not be demanded at a tuition rate high enough to cover their costs. It may also mean that the director should be free to offer some courses which involve high cost inputs (such as courses taught by authorities in a field) if students demand these courses and are willing to pay for them.

For courses offered in response to public demand, a continuous scrutiny of costs is essential. At the same time, analysis of course effectiveness is also important. The purpose of the adult education director should be to provide courses which result in a desired level of effectiveness at the lowest cost.

Costs and the Production Process. The fact that the market place will help provide controls on costs does not relieve the adult educator from a responsibility for examining the costs of his programs. In particular, the opportunities provided by technological change should be kept in mind. Some kinds of educational programs may take place in the home rather than school. Correspondence courses and educational television provide important opportunities for cost reduction, especially when the private costs of transportation and child care are taken into consideration. Audio tape and, more recently, video tape provide opportunities to deliver high quality instruction to the home or the office.

In the main, of course, costs are related to two factors — class size and teachers' salaries. Class size is in part related to the nature of the educational experience. Large classes are appropriate for lectures; even larger "classes" are possible with the use of television; smaller classes are necessary when interaction between students and teacher (and among students) is desired, or when complicated or dangerous machinery is used.

Teachers' salaries are affected by the market place. High school teachers are often willing to work for additional salary; they constitute a dependable supply of instructors in certain subject areas. In the case of instructors in certain trades, higher salaries may be required to obtain competent teachers. Some districts respond to consumer demand [illegible] courses taught in the evening by highly qualified individuals who command high rates of pay.

When a state or school district places a ceiling on salaries, it will, in effect, be limiting the supply of teachers who may be obtained, and will therefore be limiting the kinds of course offerings which are possible. Consumption-type courses, in particular, are vulnerable to such controls. Controls on teacher salaries may, in effect, prevent the free market principle from operating in the field of adult education.

Program Costs. One of the most difficult aspects of this study has been the attempt to develop an analysis of unit costs. Some of the problems have been described above. Others are related to the nature of the data.

1. Our returns include hundreds of different courses. There are large cost differentials among these courses. It is almost impossible to provide a picture which deals adequately with the costs of providing courses in high school French, skiing, bulldozer operating, and culinary cooking.

2. In view of the difficulty, described above, of attributing overhead costs to programs, it is desirable to analyze the major ingredient of

cost, namely teachers' salaries. However, salaries also showed wide variation in our sample. These variations were mainly due to regional differences, rather than to differences in programs. Thus, in our North Carolina districts, teachers' salaries ranged from $4.00 to $5.00 per hour, with the exception of courses in bulldozing and surveying. In New Jersey, on the other hand, salaries varied from $7.00 to $10.00 per hour, with salaries paid to teachers of some "consumption" courses being much higher. While averages do not reveal the great spread which exists, the following tabulation, based on one sample of school systems, provides some notion of the existing situation.

	COURSE AREA			
	Adult Basic Education	*High School Completion*	*Vocational*	*"Consumption"*
Median Salary	$6.60	$6.80	$6.80	$7.20
Mode (Using Intervals of $1.00/hr.)	$5.50	$6.50	$6.50	$6.50

3. The problem of analyzing the cost implications of class size is even more difficult. Some courses have many sections, which differ widely in enrollments. Enrollments depend on the minimum cut-off point. Where enrollments were very small (less than 5 in a large number of cases), costs were magnified. Apart from the fact that high school completion courses tended to have larger classes than other courses, our data provide no meaningful picture of class size.

4. Inter program variations add further complications. In 23 out of 34 districts offering Adult Basic Education programs, teachers' salaries ranged from $5.00 to $7.50 per hour. If we can assume that class size ranges from 10 to 14, this provides a cost range of from 33 to 75 cents per student hour. Our data show great variation in the number of hours required for the course. For a class of 12 students, where teachers are paid $6.00 per hour, and where the course requires 250 hours, the cost of teachers' services will be $125 per student for the year. Overhead costs are in addition, of course.

In 20 of the 30 districts offering high school completion courses, salaries were between $5.00 and $8.00. Classes tended to be larger than in the other categories of courses. If we assume a class size of 15 to 20, public costs for teachers salaries will run from 25 cents to 53 cents per student hour. The number of hours spent per year varies, according to the number of courses in which a student enrolls. Where total enrollment is 200 hours, teacher salary costs $6 per hour, and class size 15 students, the total yearly costs for teachers' salaries is about $80 per student.

In vocational and consumption-type courses, costs varied greatly from course to course. In the case of vocational and consumption courses, there was greater spread in teachers' salaries than in the other courses. There was also a great variation in class size and in number of hours in the course-year. These variations preclude our making any meaningful statements about costs.

The Planning Function

Improved planning is essential if scarce public and private resources are to be used effectively. Educational planning depends upon an adequate supply of reliable information. Governments and corporations need such information, in order that each may produce and distribute appropriate educational services. Individuals need such information, to permit them to conduct individual cost-benefit analyses of the various opportunities, and to choose those educational activities which provide the greatest benefits for the least cost.

In the case of adult education, it seems likely that individuals do not have complete information about the availability of employment opportunities, or about the various kinds of leisure time activities which would be opened up by further education. We can safely assume, as well, that few people have full information about the kinds of adult education programs which are available, especially in the major metropolitan areas. Finally, people often have insufficient information about the relationship between the possession of certain kinds and amounts of education and the availability of specific employment opportunities.

The study of adult education is greatly hampered by the lack of base-line data. While the monumental study of Johnstone and Rivera provides a great deal of information about participation in adult education programs, basic financial and enrollment data are severely lacking. It is our hope that state reporting requirements will be strengthened in the future.

In spite of extensive surveys of education and the job market, it appears that most state governments possess only very superficial information about human resources, and the need for such resources. In particular, data gathering with respect to adult education is quite incomplete. Such data are collected in few states. Present information is most unreliable; in some states, it is almost non-existent.

We therefore recommend the creation in each state of a State Office of Human Resource Development, whose concern is for the collection and dissemination of information about human resource needs and about the present educational level of members of the labor force. In a number of states, such agencies already exist. Their activities should be extended to include the study of adult education needs and activities. One of their responsibilities should be to survey the present educational attainments of the population. These agencies should collect information about adult education programs. They should make such information available to individuals, corporations, and other governmental agencies.

These agencies should also be in a position to identify unmet needs and demands in adult and continuing education, and to explore ways in which these needs may be met. In this context, needs include: (a) a desire on the part of individuals for programs which are not now provided, and (b) areas in which there are important potential social benefits.

Since individuals possess an increasing supply of leisure time, and since there are important individual and social benefits to be gained through a productive use of leisure time, these agencies should also gather information about leisure-oriented adult education activities. This is not to say that government should impose a set of values concerning the use of leisure, merely that information should be gathered and available.

We have stressed the states' role in planning. However, the Federal and local levels of government also have important functions in the financing and provision of education for adults. We now turn to the responsibilities of the three governmental levels.

The Federal Government and Adult Education

A number of Federal agencies are actively engaged in providing programs for the education of adults. This involvement has made a significant impact. We have therefore examined the rationale which underlies these programs, as well as the manner in which it is implemented.

The activities of the Federal government in the field of education are so widespread that it would be difficult to examine them in full detail. We have therefore emphasized two major aspects of the

Federal concern, namely, vocation-related programs, and programs for developing literacy among adults. The first of these areas is covered in another satellite project. This study has emphasized programs designed to produce literacy among adults.

Our study suggests that Federal programs have a significant impact in communities which have sizable numbers of poor and illiterate people. In communities populated largely by the under-privileged, Federal programs constitute the only major adult education effort. In more heterogeneous communities, federally-financed programs for low income people tend to be supplemented by programs for other segments of the community financed from tuition, state funds, and local taxes.

Federal investment in adult literacy programs should be continued and expanded. Continuous attempts should be made to assess the results of the programs, so that the merits of expanding the level of investment can be explored and so that the most effective methods of providing such programs should be determined. Since the ten percent matching requirement creates the greatest fiscal burden in those states and communities which are most in need of these programs, this requirement should be discontinued.

State Support of Adult Education

School districts and junior colleges operate under the laws of the state. Hence, state law is a critical factor in determining what programs shall be offered, how they shall be provided, and how they may be financed. In short, state constitutions and state legislation provide the context within which educational programs for adults are provided.

Even a casual examination reveals wide differences in the approach of the states to adult education. The state of Florida, with an estimated 1965 population of about 5,900,000 spent over $5 million for adult education programs (from state revenues) in 1968-69. This amounts to over 80 cents per person. In contrast, several states allocated no money to adult education, and others spent only token amounts.

Of probably equal importance is the intent of state law and state administrative arrangements. In a state which emphasizes the importance of adult education, and which encourages local communities to provide suitable programs, using a mix of private and public funds, it is likely that a valuable set of activities will be developed. In a state which ignores or discourages such activities, and which imposes constraints on local actions, the result will be much less impressive.

We have examined three major methods of providing state fiscal support for programs of adult education, namely, the foundation program, cost sharing, and flat grants. Each of these alternatives has some merits.

1. The foundation program recognizes the presence of differences in local fiscal ability, and therefore tends to make it possible for all communities to provide educational programs for adults. The two states in our sample which use this method of providing funds for local school systems are both characterized by the presence of outstanding educational programs for adults. This is probably the best method of financing programs for which important social benefits are anticipated. Care must be taken to ensure that this method of financing does not subsidize private investment in the education of those who can afford to pay the full cost and who will reap sufficient personal benefits to offset these costs.

2. Cost sharing procedures take into consideration the fact that costs vary considerably from community to community within a state. These procedures encourage fiscal prudence on the part of the local educational agency since part of the costs will be paid from local revenues — either taxes or tuition. The main disadvantage of this procedure is that those communities which contain large numbers of low income, low education residents are least able to pay their share of the costs. Cost sharing is likely to help the middle and high income communities, to the disadvantage of low income communities. Since the state collects taxes from all its residents, the result may be that individuals in the lower income ranges pay taxes to help support the education of the more affluent.

One type of cost sharing which merits some consideration is the payment by the state of a portion of the salary of the director. This procedure is not biased in favor of either the wealthy or the poor. If the director performs his central function, namely, to meet the demands of the well-to-do while aggressively providing both programs and information about programs for the poor and the illiterate, he becomes a central figure in the entire process. ***In states that do not include adult education in the foundation program we endorse the payment by the state of at least part of the salary of the local director of adult education.***

3. Flat grants consist of the payment by the state of a given amount, on a student-hour or a full-time equivalent basis to the local com-

munity. This is a type of cost sharing which does not recognize intercommunity differences in costs. Since the amount provided is the same for all communities (on a per capita basis), this procedure is more nearly equalizing than cost-sharing. If the amount of the state grant is adequate, the local district is able to provide the appropriate courses without excessive financial strain. Again, careful studies are required to ensure that this process does not result in subsidizing those who are able to pay for their own education.

We hesitate to make a single proposal concerning state support for adult education. Our research clearly indicates that there is a positive relationship between income and enrollment, even though tuition fees increase with income. Furthermore, a sizable number of students would be willing to pay a higher fee than they are now paying. Where adult education can be considered as investment, tuition is justifiable (for those who can afford it), because of the additional income which is received. Where adult education consists of immediate consumption (for example, in the case of instruction in tennis or ballroom dancing), adult education is a consumer's good which should compete with other such goods for the individual's resources.

On the other hand, some courses have benefits for others than the person who enrolls in them. We therefore argue for government support of such courses, and for a zero or even a negative tuition rate for them.

One of the major responsibilities of the director is to survey the demands for adult education in a given community, and the needs, as suggested by potential social benefits. This requires a sophisticated survey, one which requires considerable expertise. The director should have access to considerable resources, including experts in the field of survey research.

The role of the state is to ensure the provision of adequate resources, to stimulate local programs, and to assess them. More money will be required, per head of population, in poorer communities than in wealthier areas. This suggests that "equalizing formulas" are preferable to flat amounts per student or per head of population. It is particularly important that states encourage local leadership.

We turn briefly to a consideration of state laws regarding the provision of courses. Some safeguards are needed in order to protect the consumer of adult education courses. These safeguards may take the form of quality control with respect to instructors, limitation on class size, and ensuring that courses are not offered in cases where personnel, equipment, and space are inadequate. On the other hand, such safeguards, if over-rigid, may seriously constrain the program. We therefore, make the following suggestions:

1. *The requirements for teacher certification should not rule out the use of well-qualified people who do not possess regular certification.*

2. *Limitations on salaries can be exceedingly constraining. Except in the case of courses which are the same as those offered in the day schools, there is no reason why teachers for adult education courses should be paid according to the regular schedule. In cases where the cost of the courses is paid through tuition, there should be no state mandated ceiling on salaries.*

3. *In the case of courses where there are clear investment or consumption benefits for students, state-mandated ceilings on tuition fees are undesirable.* There should, however, be careful fiscal guarantees, including the requirement that books be kept, that these books be audited, and that financial reports be made to the state.

We turn, finally, to the more general question of reporting by local school districts to state agencies. The present lack of information on the part of the states is, in our opinion, a major impediment to improvements in this field. *We advocate careful attention to the manner in which data concerning adult education are reported. An inter-state agreement on format, possibly developed through either the U.S. Office of Education or the Education Commission of the States should be developed. Information concerning courses offered, enrollments, by courses, and by student hours; revenues and expenditures; and tuition charge should be reported.* State Planning Agencies should supplement this information by more detailed studies, including follow-up studies of graduates of the various programs. This total body of knowledge will, in our opinion, contribute in an important way to the extension of opportunities for adults to continue their education.

We have avoided the activities associated with Junior Colleges; these are dealt with in a separate Satellite Project. In some cases, the community programs offered by Junior Colleges are quite similar to those provided by school districts. In some cases, Junior Colleges and school districts provide identical programs in the same community. In other cases, state laws favor either the Junior College or the school district in the distribution of funds. We avoid taking a position on this problem, except to say that where state law favors the one or the other institution, it should be by conscious design, based on certain objectives, rather than by inadvertence.

The key to the provision of a successful program of adult education activities lies in the selection of the Director of the program. We have assumed that the competent director is one who will maximize his total budget. His success is therefore measured in part by the amount of resources he is able to obtain. The other criterion of success is his ability to provide courses meeting the needs and desires of the various parts of his total community.

Since the director operates within the framework of state law, constraints extablished at the state level will have an important influence on his program. However, he often has, within these constraints, a great deal of freedom. *Adult education programs, more than any other aspects of the total educational enterprise therefore reflect the personality, the aspirations, and the education of the director. In our opinion, finding competent people for this position, and providing them with resources and encouragement is the most important single way to extend and improve adult education as provided by school districts.*

LOOKING TO THE FUTURE

This section summarizes our conclusions with respect to future resource needs for adult and continuing education. Unlike the other studies, this project does not culminate in a set of projected costs. The reasons for the special treatment of this aspect of education are discussed below.

We again emphasize that the widespread diffusion of knowledge is essential in our society. Education is necessary for the welfare of our social systems, and for the fulfillment of the aspirations of individuals. In these times, when the total stock of knowledge is increasing exponentially, it is necessary to regard the educational activities of adults as equal in importance to the education of the young. Life-long education for everyone may within our lifetime become a necessity, rather than a luxury.

This does not necessarily imply that the nation's school systems must equip themselves to provide education to the entire adult population. Many educational services are now provided by private organizations. Because large corporations depend upon their own educational systems to ensure a competent labor force, they will continue and expand their on-the-job training programs. Corporations now engaged in "selling" educational services will continue to do so. In fact, the provision of educational services through private agencies may become more typical in the future than it has been in the past. Within the public sector, adult education will continue to be provided in many contexts. Adult educational activities are so complex that this kind of pluralism is essential.

Nor can we assume that the traditional classroom setting will be the typical method of "delivering" adult education services. Newer technologies may revolutionize the field of adult education, just as they may revolutionize other aspects of the educational enterprise. As the skills of the advertising industry are applied to adult education, *Sesame Street*-like programs for adults may be developed. The implications of this possible development in terms of a new potential for indoctrination are frightening. Used for beneficial purposes, such programs might provide a variety of courses, including literacy education, at a fraction of present costs. Video and audio tapes can be used for many educational purposes, including the continuing education of professionals.

Some judgments may be made about fiscal requirements for two programs. Let us consider, first, programs for developing Adult Literacy. The size of the target population is problematic. Consider the following data, from the 1960 Census:

3.0 million illiterates (no school attended) age 14 and above

8.3 million functional illiterates (less than five years of schooling) age 25 and above

24.0 million (less than eight years of schooling) age 25 and above

58.6 million (less than 12 years of schooling) age 25 and above

Even if we use the "functional illiterate" definition as the basis for defining needs, the present programs are clearly inadequate. About a half million adults were enrolled in ABE courses in 1969. However, a large proportion dropped out before completing the courses. Some courses were of short duration, and probably of minimal effectiveness. The proposed appropriation of $50 million provides only about $100 per enrollee. We would consider it to be desirable national policy that this appropriation be increased to at least $100 million. The state and local matching requirement should be eliminated. Quality controls should be established, and a minimum term (of say 200 hours per year) should be enforced. Programs should be carefully evaluated.

In a recent year, approximately 1 million students were enrolled in courses designed to permit them to complete high school. This rate of enrollment is not sufficient to permit the nation to reduce the educational deficit represented by almost 60 million adults who possess less than 12 years of schooling. We propose that states establish as a matter of high priority the financing of local programs designed to permit adults to complete high school. (This would give adults educational opportunities equivalent to those now offered students.) Support should, in our opinion, be provided through the same basic foundation programs by which elementary-secondary school students are supported (Adult enrollees should be reduced to full-time equivalency.)

Finally, we recommend that states and local school districts move as quickly as possible toward the appointment of directors of adult education in local communities. In many cases, these directors will be located in school districts; in some communities, they will be associated with community colleges. Their roles will be to determine the nature of public and private demand for adult education in their community, and to provide courses to meet this demand. They have the added responsibility for obtaining money from appropriate sources. In some cases, they will charge tuition; in other instances, they will obtain Federal or state funds. Their responsibility will include providing information about courses, and encouraging adults to further their education.

NOTES AND REFERENCES

1. See, for example: the entire issue of *Journal of Political Economy, LXX*, Part 2 (October, 1962); W. Lee Hansen, "Total and Private Rates of Return to Investment in Schooling," *JPE*, LXXI, No. 2, pp. 128-40; Gary S. Becker, *Human Capital*, National Bureau of Economic Research, 1964. The best survey of developments in this area remains Mary Jean Bowman's "The Human Investment Revolution in Economic Thought," *Sociology of Education*, Vol. 39 (1966) pp. 111-38.

2. Burton A. Weisbrod, *External Benefits of Public Education*, Princeton University Industrial Realtions Section, 1964.

3. An excellent review of studies in this area is Thomas I. Ribich, *Education and Poverty*, The Brookings Institution, 1968.

4. John W. C. Johnstone and Ramon J. Rivera, *Volunteers for Learning:* A Study of the Educational Pursuits of American Adults, Aldine Publishing Co., 1965.

5. Illinois Revised Statutes, 1969, Chapter 122, Section 201-3.

6. Florida State Department of Education, *Administrative Provisions for Special Programs* (I), 130-6.13.
7. Rules of the Board of Regents, Section 161.1.
8. Florida State Department of Education, *Administrative Provisions for Special Programs* (I) 130-6.12.
9. *Ibid*, 130-6.13.
10. Maryland Public School Laws, Article 77, Section 52.
11. Utah State Legislation for Adult Education, Section 9-2-4 (B).
12. Mississippi School Code, section 6240.
13. An example would be North Dakota, which has no constitutional or statutory mention of adult education, and no state level adult education activities beyond providing an administrative office for Adult Basic Education, the matching funds for which are provided by local districts.
14. California Education Code, Ch. 784, Section 17951.
15. Florida School Laws, 236.04 (6).

CHAPTER 6

The Community Junior College: Target Population Program Costs and Cost Differentials

JAMES L. WATTENBARGER[*]

The continued rapid growth of community colleges in the several states emphasizes the educational services these institutions are expected to provide. Enrollments are continuing to expand at a 12 percent increase per year and new institutions are being established at a rate of one each month if not one each week. The Carnegie Commission has recently issued its report on the "Open Door Colleges" and projects a need for the establishment of 230-280 new instititutions by 1980.[1]

The development of community colleges is no longer a matter of philosophical conjecture, however. In at least ten states a large part of the higher education enrollment is found in the community colleges. These states should provide adequate experiences upon which sound predictions for the future growth in other states may be based.

The community junior college has become an integral part of the public educational system in such states, and, therefore, examples or models of the future might be developed from examining these states. While it may be somewhat difficult to predict with absolute certainty the direction which represents the future of education at this level, the laws of probability would support the position of this study: that education at the post high school level of less than baccalaureate degree will follow the pattern exemplified in selected institutions which are representative of the best community colleges currently operating.

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Using certain selected institutions as data bases, the following questions are considered:

1. What target population may be served in community junior colleges during the next few years?

2. What are the current patterns of financial support for community junior colleges?

3. What may be projected as the anticipated needs for supporting community colleges in the 50 states?

4. What are the cost differentials among the various programs in typical community colleges?

THE EXEMPLARY COLLEGES

After a careful analysis of many considerations, 15 institutions were selected from seven states; these community colleges were viewed as demonstrating the qualities and carrying out those educational activities which may be expected in all community colleges when these institutions are more generally found in each of the 50 states.

The steps used in identifying "exemplary" colleges were:

1. *Identification of those states which met the criteria for inclusion in the study*. The criteria which were used are:

   a. The state supports a junior college system which has been in operation for at least three years.

   b. Fifty percent or more of the state's population live within commuting distance of a community junior college.

   c. The state has a sound legal basis for establishing community junior colleges.

d. There exists a statewide Master Plan for the development of a community junior college system.

e. The community junior college system is comprehensive in nature: it offers the first two years of a four year baccalaureate program; it provides a variety of occupational education; and it offers a variety of continuing education programs.

f. State support for current operating expenses in the community junior colleges equals 30 percent or more.

g. The selected states are geographically distributed in order to be representative of the United States.

2. *Identification of those institutions which met the criteria for inclusion in the study.* These criteria are as follows:

a. The community junior college offers a comprehensive program of studies including university parallel, occupational, and continuing education.

b. The community junior college bases its admission of students upon an "open door" policy.

c. The institution had an enrollment of at least 1500 students in fall, 1968.

d. The institution is recognized by the regional accrediting agency.

e. The community junior college consciously attempts to serve the target population in the district to the fullest extent.

f. The community college provides guidance and counseling services to its students.

The exemplary colleges provided basic information and cost analysis data which have been used to provide the basis for conclusions reached and described herein.

TARGET POPULATION

The emphasis upon the growth of the community college represents a conscious effort to provide universal opportunity for post high school education. In several states planning has been carried out to make this goal of elementary and secondary education a goal of higher education also. The 15 exemplary community colleges included in this study were selected because these particular institutions have been envisioned by those who are familiar with their programs as indicative of future directions in the development of universal opportunity for education at this level.

The community junior college has undertaken the formidable task of attempting to provide for most of the post high school educational needs of the citizenry who may benefit from further education. Several writers have pointed out that the community junior college provides post high school education for the total population, youth and adult. Although many community junior colleges have not as yet achieved this goal, the total population has been receptive to the goal itself as is evidenced by the tremendous growth of the community junior colleges during the last decade.

The community colleges of today cannot be content to serve only those who come to their doors of their own volition. The leadership of the colleges realizes the obligation to serve many of the post high school educational needs of the entire population of the college district. Who then are these people and what are their educational needs?

In a study of over 13,000 students in ten junior colleges Medsker found 53 percent to be 22 or younger, 31 percent to be from 23 to 29 years of age, and 16 percent to be 30 years of age or older.[2] A study of junior colleges in Florida conducted at approximately the same time found that full-time students in the 16 to 22 age group comprised 69 percent of the junior college enrollment; the 23 to 29 age group, 15 percent; and the 30 and older group, 16 percent.[3]

Even though the two studies indicated that over one-half of community junior college enrollments were in the age group generally considered to be of college age, one-third to nearly one-half of the community colleges' enrollments could be expected to come from students over 22 years of age. Approximately one-sixth of the total enrollment could be expected to come from that segment of the population 30 years of age or older.

As colleges develop in such a way as to encourage more part-time enrollments, these percentages may vary in the direction of a larger proportion of older students. This is illustrated by the fact that most part-time students are working in regular jobs while taking one or two classes and have assumed responsible places in the work structure of their communities.

It is expected that the population of the United States in each age group will increase in number through 1980. The data in Table 6-1 indicate that the population in the age group of 15 to 24 is expected to increase 15 percent between 1970 and 1980. The population in the 25 to 34 age group is expected to increase 46 percent by 1980. The number of people in the over 34 age group is expected to increase 9 percent over the 1970 figure by 1980. In the total population of 15 years of age or older the increase by 1980 is projected to be 18 percent. Utilizing the Medsker report and the Florida study along with the Bureau of Census projection for population figures in the same approximate age groups gives an indication that there could be an expected increase in community college enrollment based entirely on population age changes.

TABLE 6-1

UNITED STATES PROJECTED POPULATION BY AGE GROUPS FOR 1970 AND 1980

Age Group	*1970*	*1980*	*Increase*	*Percent Increase*
15 - 24	36,361,000	41,876,000	5,515,000	15
25 - 34	25,315,000	36,997,000	11,682,000	46
Over 34	84,363,000	91,618,000	7,255,000	9
15 and Over	146,039,000	170,491,000	24,452,000	18

Source: U.S. Bureau of the Census. *Current Population Reports*, Series P-25, No. 381.

As seen by examining the data in Table 6-2, only 19 percent of the over 14 population were in the 15 to 24 age group at approximately the time (1966) of the Medsker study and the Florida study. Only 16 percent of the over 14 population were in the 24 to 34 age group, but 64 percent were in the over 34 category. This is in contrast to the 1980 projection which forecasts 24 percent of the over 14 population in the 15 to 24 age group; 22 percent in the 25 to 34 age group; and 54 percent in the over 34 age group. In the final analysis these data indicate that the age segment which has been producing most of the community college enrollment is increasing both numerically and in proportion to the rest of the post-high school age population. Even without taking into consideration efforts to serve broader segments of the population in existing community college districts or considering new community colleges in districts not now being served, there can be a projected growth of community college enrollment of nearly one-half million by 1980. However, this cannot be considered a realistic projection of enrollment since the data from the exemplary colleges indicate that other vital factors must be considered.

TABLE 6-2

UNITED STATES POPULATION BY AGE GROUP AND PERCENT OF 15 AND OVER POPULATON FOR 1960 AND 1980

Age Group	*1960*	*Percent of Population 15 Years and Over*	*1980*	*Percent of Population 15 Years and Over*
15 - 24	24,583,000	19	41,876,000	24
25 - 34	22,911,000	16	36,997,000	22
Over 34	81,615,000	64	91,618,000	54
15 and Over	128,567,000	100	170,491,000	100

Source: U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 381.

The Medsker study and the Florida study cited above indicated a diverse group of community college students as far as age factors are concerned. Cohen and Brawer pointed to other tendencies of heterogeneity among such students such as academic ability and socio-economic background.[4] At the same time Cohen and Brawer hastened to point out characteristics of community college students where there is more homogeneity than heterogeneity, i.e., conformity and certain personality characteristics.

Another characteristic of community college students is that many students are married. Frequently both married partners are in school at the same time or one spouse may be working while the other is attending school. Medsker reported that in the six colleges in his study which reported on married students 23 percent of the students were married.[5] In the Florida study 26 percent of the community college students were married.[6] This large percent of the total student body represented by married students causes a somewhat different view of education from a sizeable portion of the student body.

Community junior college students come from all socio-economic levels of society. Studies have indicated that in some community colleges there is a tendency to provide opportunity for a disproportionate number of families of the upper levels of society.[7] However, Clark reported that the San Jose City College student body was an almost exact duplicate of the social areas of San Jose.[8] Thornton concluded that the junior college is, in fact, providing educational opportunity to those from less favored socio-economic groups and assisting in the upward mobility of some of its members.[9] The part-time student is another type of college enrollee which is difficult to describe. He is generally in an "adult" course which has been offered primarily for those who are employed in full-time jobs. Nationwide, the part-time students made up 48 percent of public junior college enrollment in October, 1968.[10] These students range in educational accomplishment from those who have not completed high school to those with college degrees. These students are found in some classes which are offered for college parallel credit, in some which are vocationally or technically oriented, and in others which are offered without credit. They attend classes which are offered in both daytime and evening sessions; many take advantage of classes offered on Saturdays.

The students going to school part-time include housewives who want to improve themselves culturally, who want to become better homemakers, and who wish to prepare for gainful employment. There are teachers enrolled part-time who wish to gain more expertise in the areas outside their specialty. There are those who wish to change jobs and those who must change jobs as their old jobs become obsolete. There are those who are employed and find their opportunities for advancement blocked by lack of education. Finally, the senior citizen is represented by those who want to build upon an area of interest which had been postponed from younger and busier days. Some of the older students are there merely for the companionship found in those who share mutual interests.

There are also those students in a community college who have a clear view of what they wish to become and know how the college can help them to achieve this goal. These students in college parallel and vocational-technical programs who have determined their goals can readily be assisted in efforts toward those goals. Frequently students enter community colleges without clearly defined goals and must be allowed to find their niche in the educational world. Community colleges have been generally assigned a responsibility to assist these students to find the place for which they are best suited rather than to allow them to become dissillusioned college dropouts forever haunted by an unnecessary failure experience.

What will be the population served by the community college of 1980? If it can be assumed that the precedent set by the exemplary colleges of this study will be replicated in other community colleges, then the community college of 1980 will have made provision to meet the post-high school educational needs of the population. This will include the young single people as well as members of the senior citizen group who suddenly find themselves single again. Special programs for the married, for the full-time employed, for the disadvantaged, for the people whose jobs have become obsolete, and for those who just want to learn for the joy of learning will be provided.

The community college has undertaken to achieve what many considered to be an impossible goal, but the continued contribution of community colleges to society in general depends upon a determined persistence toward that goal. The provision of post-high school educational opportunity for all is the most important goal in the democratization of higher education and the junior college has been assigned a leadership role in accomplishing this goal, according to Cross.[11] This attempt to serve the post-high school educational needs makes it desirable to base projections of future community college enrollments on total population figures.

Other factors affecting predictions of enrollment in community colleges include the pressures toward increasing the number of students who will enroll in occupational or career programs. When asked, most community college presidents predict sharp increases in this part of the community college program. In addition to that increase at least a similar increase is expected in the continuing education courses which serve the greatest variety of educational needs..

Several states have moved to establishing upper division universities thereby forcing students to enroll in the community college in order to begin a baccalaureate degree program. Other states with and without complete concurrence from the institutions themselves have established maximum levels for freshman and sophomore enrollments. Those states wherein the exemplary colleges were located report that over one-half, up to 88 percent, of freshmen entering public colleges enroll in a community college. This factor, along with the others described above; makes predictions of future community college enrollment a very tentative exercise.

Predictions of Enrollment.

The 15 exemplary community colleges represented a wide diversity in terms of maturity of institutions (number of years in operation) and in terms of the extent of program development. The range of the ratio of students enrolled as compared with total population extended from 3 per 1000 up to 45 per 1000 and the median was 17 per 1000.

If these same data are used to identify the ratio of students enrolled in the community college to the total population in the district, the ratio varies from one student in each 333 citizens to one student in every 22 citizens. In the nine exemplary community colleges established prior to 1965 the median ratio was 1:58.

In most instances the major part of student enrollment in community colleges (up to 95 percent) resides in the area served by the college. Out-of-district students and out-of-state students do not constitute any very large part of community college enrollment. It would seem sound to assume that this fact will continue to be the case.

Assuming, then, that community colleges will continue to serve mainly the districts in which they are located, and furthermore, assuming that new colleges will be founded to serve additional districts, one may expect that a much greater segment of the total population of this country will soon live in a place where a community college is accessible. If community colleges in general serve as well in the future as the exemplary colleges reported herein are serving their local citizens, it would seem reasonable to assume that the population of the entire country will be attending community colleges in a ratio approximating the median given above.

The data in Table 6-3 represent the seven states in which the community colleges of this study are located. The latest enrollment figures from the AAJC directory are given for each of the states and for the United States. The Bureau of the Census population estimates are given for each state and for the United States for 1970 and 1980 with both the upper and lower estimates given for each year. In employing the ratio of 20 community college students per 1000 population in each state and in the United States a projection is described. If each state were providing an adequate number of community colleges and if these community colleges in turn were appropriately serving

TABLE 6-3

ESTIMATED NUMBER OF STUDENTS WHO WILL ENROLL IN COMMUNITY COLLEGES IN 1970 AND IN 1980 IF A RATIO OF 20 PER 1000 TOTAL POPULATION IS OPTIONAL

		1970			1980		
State	*Fall, 1969 Public Junior College Enrollment* [a]		*Estimated Population*	*No. of Students at 20 per 1000 Population*		*Estimated Population*	*No. of Students at 20 per 1000 Population*
California	657,821	b	21,004,000	420,080	b	27,742,000	554,840
		c	20,657,000	413,140	c	25,343,000	506,860
Florida	110,178	b	6,654,000	133,080	b	9,019,000	180,380
		c	6,528,000	130,560	c	8,105,000	162,100
Illinois	122,579	b	11,131,000	222,620	b	12,837,000	256,740
		c	10,987,000	219,740	c	11,953,000	239,060
Massachusetts	23,850	b	5,555,000	111,100	b	6,284,000	125,680
		c	5,484,000	109,680	c	5,907,000	118,140
New York	168,596	b	19,162,000	383,240	b	21,988,000	439,760
		c	18,952,000	379,040	c	20,564,000	411,280
North Carolina	39,163	b	5,238,000	140,760	b	6,048,000	120,960
		c	5,167,000	103,340	c	5,588,000	111,760
Texas	97,778	b	11,452,000	229,040	b	13,606,000	272,120
		c	11,307,000	226,140	c	12,722,000	254,440
United States	2,051,499	b	206,342,000	4,126,840	b	242,307,000	4,846,140
		c	203,940,000	4,078,800	c	226,681,000	4,533,620

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a. Harper, Wm., *Directory*, American Association of Junior Colleges, 1970.

b. U.S. Bureau of the Census, *Current Population Reports*, Series p-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985," Series 1, pp. 42-49.

c. U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985," Series 11, pp. 42-49.

their citizenry, there would be an increase of over 100 percent in enrollment for the 1970 year compared to 1968.

It is unrealistic to believe that the 1970 fall enrollment figures could even approach the figures given here, but it is not unrealistic to believe that community college authorities will observe the work of the exemplary community colleges and develop programs which will be of service to the citizens of each college district. If ten years is considered a reasonable time for this to materialize, then the year 1980 should see a minimum of 4,500,000 people being served by community colleges.

This does not appear to be unrealistic since California, with approximately one-tenth of the nation's population, already is serving approximately 30 students per 1000 population. Although California has reached this level, the only other state in the study which has approached a 20 per 1000 figure on a statewide basis is Florida.

Two of the exemplary colleges included in this study were serving more than 40 per 1000 of their population each year in 1968. The college with the best service record had reached 45 students per 1000 population. Table 6-4 contains the population projections for the United States for 1970 and 1980. The data show student projections based on ratios from 20 per 1000 up to 50 per 1000 population. The data indicate that the community colleges in the United States should be serving a minimum of 4,500,000 students by 1980 if they will but attain the level of service of the exemplary colleges of this study. If community colleges are developed to be of service to all the communities in the United States and each community college is dedicated to provide the services of the exemplary college in this study reaching the highest percent of its community population, then community colleges could be expected to be reaching more than 12,000,000 people by 1980.

A projection of 12,000,000 community college students by 1980 may seem completely out of reason to many people. This figure would mean that 50 per 1000 or one person in 20 would be taking at least one course annually at the community college. One could say such a figure is not possible, but two of the colleges in this study have closely approached this figure and several of the newer colleges have facilities in the planning stages which would allow their districts to approach this ratio more closely than previously possible.

TABLE 6-4

COMMUNITY COLLEGE PROJECTIONS FOR 1970 AND 1980
BASED UPON VARIOUS NUMBERS PER 1000 TOTAL POPULATION

	1970	1980
U. S. Population Projections	a 206,342,000	242,307,000
	b 203,940,000	226,681,000
Number Junior College Students at:		
20 per 1,000	a 4,126,840	4,846,140
	b 4,078,800	4,533,620
30 per 1,000	a 6,190,260	7,269,210
	b 6,118,200	6,800,430
40 per 1,000	a 8,253,680	9,692,280
	b 8,157,600	9,067,240
50 per 1,000	a 10,317,100	12,115,350
	b 10,197,000	11,334,050

a. U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 375, "Revised Projection of the Population of States: 1970 to 1985," Series I, pp. 42-49.

b. U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985," Series II, pp. 42-49.

PATTERNS OF FINANCIAL SUPPORT

The community junior colleges have historically been supported by a combination of local and state taxes with very low student fees. More recently Federal funds have been used to support selected programs or special projects. Although there has been some increase in student fees, these have generally been kept low in most states.

Arney[12] in his study of patterns of financial support described the various support patterns which were found in 1968. He also noted the trends since 1960 when Morrison[13] conducted a survey of financial support patterns for community colleges. These trends were toward more state (and Federal although to a lesser extent) support for the community colleges with a concommitantly lower level of local support. He noted, however, that 11 states reported that state funds were available to support only credit courses and that student fees were high where there was little or no state support except in California.

He reported that more than two-thirds of the states which had community college programs were using the state-local partnerships. The percentage of total operating costs which were supported from state sources varied, however, from a low of 17 percent of the budget up to 79 percent in these states. Sixteen states reported no local funds were used to support the community college operating budgets. Student fees were charged in all states except one and these fees accounted for from 0 percent of the operating budget up to 51 percent, the median being around 25 percent.

The characteristics of a sound state-local partnership plan for financing were described by Wattenbarger in 1961. These are:

1. The plan for financing should provide for joint responsibility support the community junior college.
2. The plan for financing should provide enough basic funds to support a reasonably adequate educational program in each approved junior college.
3. The plan should depend upon student tuition fees as little as possible.
4. The plan should be based upon a formula which provides for all elements of necessary costs of a good community junior college program.
5. The plan should contribute to stability of operation by providing a predictable income from year to year.
6. A sound plan will include provision for capital outlay.
7. The plan will provide access to borrowing funds for capital outlay.
8. A sound plan will recognize that responsibility for record keeping, auditing procedures, and fiscal control is a joint responsibility shared by a state coordinating agency as well as the institution itself.
9. A sound financial plan will not be dependent upon gifts or donations in providing sufficient funds for the basic quality program of instruction.

10. The plan should include a provision which would induce areas of the state not participating in the support of a community junior college to make their contributions on a basis related to the number of their own residents who attend in another part of the state.[14]

The key to the success of any state-local joint financial support plan is the formula which is used to determine the amount of support from each source. A commonly used formula is the famous "one-third state, one-third local, and one-third student" formula which has been used in New York as well as in several other states.

There are, of course, a number of other variations in the proportions which the various state and local governments contribute to the support of these institutions. These were reviewed for the 1967-68 year by Arney.[15]

The second model is that of complete state support for community junior colleges. Only a few states have patterned their community college support upon this model up to the present time. These states usually supplement state support with student fees and Federal funds.

Except in Florida the community colleges in these states are state controlled and operated for the most part. Local advisory boards or local boards of trustees have rather severely limited functions in several of these states with the major locus of control vested in a state level agency.

When this model is used, there are several guidelines which may be considered as pertinent:

1. The method which is used to provide funds to individual institutions must be objective and equitable but at the same time flexible and sensitive to specific institutional needs.

2. The method of distributing funds must require comparable information from all institutions. A formula basis for allocating funds must be used, but provision for special allocations to meet special needs must also be a part of the formula.

3. The desired "outputs" will need to be defined, described, and/or quantified. Such "outputs" will be useful in refining the formula.

4. Funds from student fees and from other sources should not be used to replace appropriated funds from the states.

5. State support should not be used as a basis for interfering with institutional integrity or for the development of a large bureaucratic state level staff.

6. The tendency to force all institutions into an identical mold as a result of a uniform financing should be resisted.

7. The tendency to use student fees to supplement inadequate appropriations should be resisted.

8. The legislature will find it most desirable to hold a single state level agency responsible for representing all community colleges and will therefore not be in a position of reacting to individual institutional appeals for support.

The model of total local support is seldom used except in those states where community colleges are just being organized. Increasing Federal support will constitute the most important influence upon the support of community colleges.

In most instances there has been little consideration given to equalization formulas and to differential costs. These factors constitute areas where research is very much needed.

PROGRAM COSTS AND COST DIFFERENTIALS

While it is an obvious fact that some occupationally oriented programs are more costly than others, and most occupational programs are more expensive than a liberal arts or general curriculum program, the character and variety of this differential have not been as well described. Few studies have given adequate attention to these kinds of data. More interesting, however, is the fact that many colleges do not keep adequate cost information in a format that lends itself to the collection, analysis, and evaluation necessary to ascertain the type of data needed for determining this differential.

The investigators in this study can report that although the data collected across the 15 colleges were not always compatible in form, more than sufficient information was available to ascertain valid program costs and cost differentials for various programs.

Operating Costs

The cost differentials for 56 programs in 15 community junior colleges are presented in Table 6-5. The average cost differential for each of the programs is also presented. A word of caution is appropriate at this point. Some of the averages were computed on relatively few cost differentials and in some cases only one program was available; thus, the data cannot be construed to be completely representative of all similar programs.

The average cost differential for a liberal arts program with an emphasis on science or engineering was 1.12. It has seldom been possible in previous studies to find this type of comparison although it would appear logical to expect that a curriculum heavily loaded with courses taught by specialized teachers would be more expensive.

Business administration programs with a cost differential of .99, and general business programs with a cost ratio of .91, were the only two of the 56 programs that had ratios of less than one. Accounting with a cost differential of 1.01 and business management with a ratio of 1.02 were the next lowest cost programs in terms of cost per student credit hour. All of these programs are heavily based upon business courses and thereby support the argument that business oriented programs are no more expensive to operate than a liberal arts, general curriculum program.

Twelve of the 15 sample colleges offered a program in data processing. The average cost differential for this program was 1.26, ranging from .99 in College L to 1.56 in College N. Having a cost differential less than unity is the exception rather than the rule for data processing, even though the high enrollments in the majority of these programs tend to lower the cost per student credit hour.

A wide range existed in the cost differentials for dental assistant, from 1.04 in College B to 1.69 in College O. The difference in size of enrollment in this program at these two colleges was the chief factor contributing to the difference in the cost differentials.

An even greater range in cost differentials existed in electronics technology between College B and College C, with differentials of .96 and 1.77 respectively. Again, only one cost differential was less than unity with the average differential, based on 13 programs, being 1.31.

The average cost differential for the Associate Degree program in nursing was also based on 13 programs. The average differential of 1.51 for the program was computed from differentials ranging from 1.09 in College B to 2.03 in College F. This extremely wide variation in cost differentials points up the need for colleges to re-examine the

TABLE 6-5

COST DIFFERENTIALS AS A RATIO OF VARIOUS PROGRAMS TO THE UNIT COST OF LIBERAL ARTS, GENERAL CURRICULUM DURING 1968-1969 IN FIFTEEN COMMUNITY JUNIOR COLLEGES

	Community Junior College															
Program	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*Ave.*
Liberal Arts (General Curriculum)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Liberal Arts (Science & Engineering)			1.07		1.12		1.07						1.23			1.12
Automotive Mechanics		1.12				1.24								1.45		1.27
Automotive Technology	1.00	1.07											1.16			1.08
Building and Construction Technology													1.68			1.68
Business Administration	.90			1.02			.93	1.13	.98	.95	1.01	.91		1.04		.99
Business Management			1.00	1.04				1.04				.96	1.04			1.02
Civil Technology	1.28							1.55		1.14		1.22	1.76			1.39
Chemical Engineering Technology	1.96		2.52								1.86					2.11
Data Processing		1.04	1.36		1.11	1.40	1.34	1.18	1.10	1.36	1.21	.99		1.56	1.42	1.26

223

TABLE 6-5 (Continued)

	Community Junior College															
Program	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*Ave.*
Electrical Installation & Maintenance	1.35															1.35
Dental Assistant		1.04					1.13		1.51	1.42					1.69	1.36
Electrical Engineering Technology	1.79			1.22				1.19			1.54	1.27				1.40
Electronics Technology	1.24	.96	1.77	1.28	1.36	1.48	1.18	1.14	1.27	1.10		1.30	1.69		1.21	1.31
Hotel-Motel Management												1.13	1.23			1.18
Marketing & Mid-Management		.95			1.00	1.10	1.05		1.17		1.11		1.35		1.21	1.12
Mechanical Drafting														2.33		2.33
Industrial Engineering Technology	1.32															1.32
Mechanical Technology	1.68		1.34		1.38	1.80		1.29		1.00			1.77			1.47
Machinist	1.30								1.26					1.30		1.29
Medical Assistant										1.64	1.41					1.53

TABLE 6-5 (Continued)

Program	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*Ave.*
	Community Junior College															
Mental Health Technology													1.47			1.47
Nursing, A.A.		1.09	1.77	1.86		2.03	1.69	1.34	1.34	1.26	1.12	1.71	1.43	1.53	1.40	1.51
Secretary, Medical			1.07			1.09		1.20							1.42	1.20
Radio-Television Technician			1.70			1.62										1.66
Mechanical Technician Design			1.42		1.50						1.75					1.56
Architectural Design Technology		1.14				1.70	1.38				1.65				1.32	1.44
Refrigeration, Heating & Air-conditioning	1.14	1.02					2.50									1.55
Secretary, Legal			.99					1.20								1.10
Secretarial Science	.93	.91	.97		1.33				.98		1.14		1.18	1.12	1.13	1.08
Tool & Die Making	1.40															1.40
Welding									1.27					1.21		1.24

TABLE 6-5 (Continued)

	Community Junior College															
Program	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*Ave.*
Commercial Art											1.44					1.44
Nursery Education								.97			1.33					1.15
Police Science		.94					.88				2.20		1.08		1.06	1.23
Air Frame Technology									1.07							1.07
Accounting, Science					1.27											1.27
Accounting		.85		1.01	1.24	1.03		.97		1.02		.93				1.01
Banking & Finance					1.19											1.19
General Business						.91										.91
X-Ray Technician										1.55						1.55
Aeronautical Engineering		1.21				1.45										1.33
Fire Science					1.38		.90									1.14
Culinary Arts (Chef)															2.01	2.01
Drafting & Design Technology									1.25						1.34	1.30
Cosmetology									1.39							1.39

TABLE 6-5 (Continued)

Program	*Community Junior College* A	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*L*	*M*	*N*	*O*	*Ave.*
Marketing-Retail Management					1.17											1.17
Building Construction Technology												1.20				1.20
Library Technician															1.88	1.88
Sheet Metal Worker						3.13										3.13
Biological-Engineering Technology										2.13						2.13
Mortuary Science							1.91					1.27				1.59
Supermarket, Food Distribution					1.58							1.08				1.33
Secretary, Executive				1.16				1.13		1.11		1.10				1.13
Audio Visual Technology										1.93						1.93
Respiration Therapy Technology															1.89	1.89

operation of their nursing program so as to utilize the community resources to the fullest extent. College B and K with cost differentials of 1.09 and 1.12, respectively, in the nursing program reported a tremendous working relationship with their community hospitals and staff, utilizing personnel and facilities to provide an optimum program at a very reasonable cost.

An average cost differential of 1.08 for secretarial science does not totally reflect the point that about 50 percent of these programs had differentials of less than one. Secretarial science as an occupational program is often funded in excess of a liberal arts program when in fact in many colleges this excess cost does not exist. A cost analysis of this type affords administrators, as well as legislators concerned with community college finance, the opportunity to compare various programs and to aid in their decisions concerning the relative costs of each.

Time will not be taken herein to develop comments about all of the listed programs. These few have been described briefly to provide an indication of some points which may be analyzed. Although these cost data do not necessarily represent the entire sample in all programs as was pointed out earlier, the data do provide an approximate measure of the program cost per student credit hour in similar institutions. Overall these differentials should be valuable as a normative basis for comparisons for currently operating programs in community junior colleges.

Capital Outlay

As mentioned previously, pertinent capital outlay data could not be gathered from all the sample institutions. Maintaining such data was not a priority in some institutions; in others, especially in older and better established colleges, much equipment had been acquired from surplus properties and some had been donated by industry. The task of assigning a value to equipment was not always complete in these latter cases.

In view of this situation, the research staff chose to develop a range of percentages for the extra cost of equipment necessary for teaching in the various programs. These percentages, based on the sample data which are available combined with information collected from a review of current literature, should provide reasonable guidelines to colleges developing new programs or expanding present ones.

Very few studies in recent years have attempted to utilize capital outlay expense in cost analysis or cost benefit studies. Several reasons are apparent for this deficiency: (1) Colleges which have been in operation for many years have had no need to keep up-to-date records on equipment since they were not required to provide depreciation schedules for auditing purposes. (2) Much of the equipment used in occupational programs in many colleges was "used" equipment, surplus property, or donated by industry making it difficult to assign a comparable dollar value on such equipment. (3) Several programs, data processing for example, have used rental equipment, and when the rental expense is computed as a part of the program operating cost, it inflates the cost differential tremendously. In the latter instance it is difficult to decide whether it is equitable to include rental expense but not appropriate capital outlay expense when making comparisons in program costs. (4) It is very difficult to get a panel of judges to agree on the length of time appropriate to depreciate the total equipment not to mention each piece of equipment for a particular program. Parry[16] emphasized this point when he consulted four people in North Carolina with extensive experience in occupational education and was unable to obtain a universal agreement on the life expectancy of certain equipment. The range was from ten to 20 years for most equipment with Parry using 13 years as an appropriate length of time for the purposes of his study.

Keene,[17] in his study of Florida Community Junior Colleges, assumed a ten year life for all occupational equipment. In developing his model for program cost differentials in the community college, the depreciation of equipment added 17.6 percent to the cost of occupational programs when compared to a general liberal arts curriculum. It is not accurate to assume, however, that all equipment has a useful life of ten years in a community college, without regard to variables such as the number enrolled, the type of equipment being used, and other factors.

In his study of program costs at East Los Angeles College, Wells[18] made no provision for depreciation and used all of the expense for capital outlay in one year as a one-time charge. This procedure has the extreme disadvantage of inflating unproportionately those programs for which the equipment was purchased.

Morsch,[19] in a report prepared for the Bureau of Social Science Research, Inc., studied 20 community junior colleges across the United States. Of the 20 he visited, he found that none of the budgets made proper allowances for depreciation, amortization, or obsolescence, although equipment repair and replacement was shown as an expense when incurred.

When variable depreciation schedules are used to allocate capital outlay expense over a period of time for a total program, several approaches have been suggested. The Illinois Junior College Board,[20] a leader in initiating statewide cost studies, has adopted an eight year descending balance depreciation schedule. All capital outlay, except buildings and site, is depreciated on such a schedule.

Although prepared at the secondary school level, the Dade County Board of Education, Dade County, Florida, has devised a depreciation schedule for equipment in vocational-technical programs that would be appropriate for community junior colleges. They utilize a curvilinear regression technique, utilizing the cost of upkeep and maintenance as well as a depreciation schedule. When the depreciated value of the piece of equipment reaches the same level as the expenditures for maintenance, the piece of equipment is to be replaced.

This latter technique seems to be the most reasonable and equitable method that the project staff has found. It should be noted, however, that this is a longitudinal study and one that takes careful planning and record keeping. The benefit of such a project, however, far outweighs the time needed. Some of the "expense" in occupational programs is not necessarily in the direct cost of equipment but in the indirect cost to students who were trained on obsolete equipment.

The sample data relevant to capital outlay that were collected from the 15 community junior colleges and that were applicable to differentiating among program costs were used to compile Table 6-6. These data were adapted from the study by Fowler.[21] The percentages represent a range of additional expense found when the expense for amortization of equipment (based on an average of ten years for the purpose of illustration), maintenance of equipment, and replacement of equipment are considered.

A science oriented curriculum in a liberal arts program had additional expense for capital outlay ranging from 5 to 12 percent, compared to the program cost based on operating expense only. A liberal arts program utilizing additional equipment for business curricula had a range of additional costs from 3 to 15 percent.

In occupational programs that are categorized as having small laboratory space, the business administration curriculum had an increased program cost of from 1 to 9 percent when capital outlay expense was included. The expense for capital outlay in secretarial science was shown to give a 6 to 11 percent increase and in commercial art, a 2 to 8 percent increase.

Medium size laboratory programs in occupational education had a wider range of percents due to the extra cost for capital outlay than did small sized laboratory programs. The greatest range was for electronics technology, from 8 percent to 19 percent. This wide range reflects in part the difference in how equipment for the electronics program was acquired. The college showing an additional 19 percent increase in cost of program due to capital outlay had purchased new equipment and equipped one of the finest electronics labs seen among the sample institutions. The college having an eight percent increase in program cost for electronics had an equal sized laboratory in terms of student stations; but much of the equipment had been donated from industry, with only a limited amount having been purchased from college funds.

The widest range of percents reflecting additional cost for capital

TABLE 6-6

RANGE OF PERCENTAGES FOR ADDITIONAL PROGRAM COST DUE TO INCLUSION OF CAPITAL OUTLAY

Program	*Range in Percent*	
	Low	*High*
Liberal Arts		
Science	5	12
Business	3	15
Occupational (Small Laboratory)		
Business Administration	1	9
Secretarial Science	6	11
Commercial Art	2	8
Occupational (Medium Laboratory)		
Drafting	4	8
Chemical Technology	3	10
Electronics Technology	8	19
Mechanical Design Technology	7	11
Nursing, A.A.	2	9
Civil Technology	2	12
Occupational (Large Laboratory)		
Auto Mechanics	5	20
Data Processing	6	22
Welding	6	16
Mechanical Production Technology	4	16
Air Conditioning & Refrigeration	4	12
Machinist	10	21

Source: Fowler, "Selected Variables . . . ."

outlay in large sized occupational labs was from 5 to 20 percent for auto mechanics and 6 to 22 percent for data processing. The high rental for data processing equipment causes this program to have the highest additional cost due to capital outlay than any of the programs investigated. Some institutions utilize the computer for both teaching and internal record keeping, thereby reducing the cost applicable to the data processing programs, *per se*. When this is done the additional program expense for capital outlay is reduced to a range of 6 to 11 percent.

BUDGETARY ALLOCATIONS

A description of budgetary allocations and the distribution of the operating expense over the various allocations provide a significant means of analyzing the priorities that occur in community junior college budgets. Historically, the major portion of an operating budget has been for instructional salaries. Medsker[22] reported in a 1969 study of two-year colleges that 52 percent of the operating budget was spent for instructional salaries, 11 percent went for general administration, 10 percent for operation and maintenance of plant, and 9 percent for auxiliary services.

The data in Table 6-7, adapted from the study by Fowler,[23] show the percent of budget allocations in 8 of the 15 community junior colleges in this study.

The average percent expended for instructional salaries, general administration, and operation and maintenance of facilities closely parallel the findings of Medsker. The only variation of any significance was in auxiliary services and this was probably primari-

TABLE 6-7

PERCENT OF BUDGETARY ALLOCATIONS FOR EIGHT COMMUNITY JUNIOR COLLEGES

Budget Category	*F*	*N*	*M*	*C*	*K*	*F*	*H*	*A*	*Ave.*
	Percents Rounded to Nearest Whole Number								
Instructional Salaries	42	54	53	53	44	62	47	57	51
General Administration	15	12	15	8	8	4	9	8	10
Oper. & Main. of Facilities	15	12	8	10	12	10	9	12	11
Instructional Resources	9	4	4	5	4	4	10	3	5
Student Personnel Services	7	13	7	5	8	11	8	11	9
Supportive Instr. Costs	7	4	12	15	12	9	15	8	10
Auxiliary Services	6	2	0	4	12	0	3	3	4

ly due to variations in record keeping. As can be seen in Table 6-7, two of the eight colleges studied by Fowler did not have a budgetary category for auxiliary services.

A contingency table containing the percent of allocation for each budget category across the eight institutions was developed. The percents for auxiliary services were combined with those for instructional resources so that when the chi-square analysis was used, the expected frequencies in all cells would be five or greater. The hypothesis of whether the difference in percent of budgetary allocations differed more than would be expected from random sampling in a population in which the component costs were equally distributed was tested and refuted ($p<.01$). The variation of expense within budget categories across the eight institutions did not vary more than would be expected in a random distribution of such categorical expense.

Stated in another way, the range of the distribution of operational expense in the various budget categories across all institutions did not vary more than would be expected in a sample of institutions as conglomerate as this group. The consistency of the allocation of operating expense in these institutions further supports the concept of their being "exemplary." Other institutions may find the budgetary patterns of these colleges valuable for normative purposes.

CONCLUSIONS

Target Population

The major consideration in projecting a target population for the community colleges of 1980 is the fact that these institutions as exemplified by the 15 colleges discussed herein will be serving the total community who are beyond high school age. Students who attend these institutions are not typical of the college age student as he is usually described. From one-third to one-half of the total enrollment is over 22 years of age and the age range extends from less than 17 to more than 75.

United States Census predictions of population growth by age group indicate that an increasing percentage of the total population will be in the 15 to 34 age groups. These are currently the age groups which produce the greatest portions of community college student enrollments. One might well expect an increasing community college enrollment in most communities if he considered only the youth; however, since these colleges have already demonstrated that they serve these young adults and older adults as well, it is important to consider the total population in developing projections for the 1980's.

The target population will be composed of the following groups of students:

1. Those youths who have completed high school and who are preparing for transfer to a four year degree program.
2. Those youths who are merely continuing their general education with specific purpose.
3. Those youths who are preparing for defined occupations which require two years of training beyond the high school.
4. Those youths who are preparing for a job which requires skills they do not have upon entering the community college.
5. Those youths who must attend any of the above programs on a part-time basis while they work.
6. Those youths whose unusual abilities have encouraged them to move through their formal education at a more rapid rate than is usual.
7. Those adults (beyond the usual college age) who have personal objectives for completing associate degrees, baccalaureate degrees, or graduate degrees.
8. Those adults who require mid-career vocational retraining.
9. Those adults needing or wanting to change their occupations.
10. Those adults who need further education than previously completed for personal, economic, social, or other reasons.
11. Those adults needing refreshment or reemphasis upon the quality of living.

This target population among the 15 colleges studied varied from a low of 3 persons enrolled per 1000 population to a high of 45 per 1000. The mean for this group of exemplary colleges is 21 persons per 1000, with a median ratio of 17 per 1000.

If this ratio is applied to the estimated population of the various states for 1970 and 1980, one can develop a projection of the possible community college enrollment for those years. Using the current Census Bureau projections, Series I & II, there should be about 4,000,000 community college students enrolled in fall of 1970. The American Association of Junior Colleges 1970 Directory indicates an expected enrollment for fall, 1970, of 2,500,000. There is obviously still a great deal of growth potential. Among the seven states included in this study California has already exceeded this 1970 projected ratio by more than 50 percent and Florida has almost reached the projected for 1970; however, the other five states would need to increase their current enrollment by rather sizeable percents in order to reach this level.

One also may note that Florida's increase in making educational opportunity at this level available has occurred almost entirely during the past ten years and that similar increases have occurred in other states of recent date. It, then, is not outside the realm of probability that the 4,500,000 students who may be predicted for 1980, using a ratio of 20 to 1000, should be expected.

An examination of the upper potential would also be in order. If the opportunity in all states were to equal that which is currently available in one or two of the exemplary community colleges, then a ratio of 50 students per 1000 population would not be impossible. Using this as the zenith of potential, one may note that more than 12,000,000 students could be enrolled in one or more courses in a community college each year.

Presidents of the exemplary community colleges have indicated their awareness of current limitations and have reemphasized the community college commitment to comprehensive programs using the broad population needs. These commitments, when accompanied with adequate financial support for the programs offered, will contribute to the full implementation of the projections developed herein.

Some of the items which currently inhibit the exemplary colleges from adequately serving their potential student bodies are:

1. *Geographic Accessibility*. Some persons in the districts cannot get to a specific location to attend classes. Attempts to alleviate this are aided by the development of multi-campus institutions and establishing centers away from the main campus.

2. *Space Limitations*. Some colleges have been forced to place limitations upon enrollments because there is not enough classroom and laboratory space available. In addition to construction of new

facilities, attempts to provide better utilization of existing space include lengthening the college day even to a 24 hour schedule, using facilities on Saturdays and Sundays, emphasizing year-round operation, and more careful scheduling.

3. *Parking Limitations.* Several colleges reported that students found transportation problems, especially parking problems, to be an especially discouraging deterrent to attendance. The suburban location of some campuses has made automobile travel the sole mode of transportation. Aside from providing additional parking spaces, the colleges will need to develop mass transportation connections with campuses as well as multi-campus operation.

4. *Inadequate Financial Support for Occupational Programs and Courses.* All colleges reported that little if any consideration has been given to the financial differential on the cost of various programs in the community college. The current patterns of financial support are based mainly on formulas which have been focused upon the overall cost of liberal arts education. Cost comparisons are most often made with university costs. Little information and little attention has been given to the cost differentials among the various community college programs. For these reasons, the university parallel programs have often taken precedence in community colleges since they are obviously less expensive and since the occupational programs for the most part have been partially supported by them. In order to provide the occupational programs, it has often been necessary to develop enough university parallel programs from which to "steal" support. This situation will be corrected by the development of a more equitable formula for allocating funds to community colleges. There will also be a need to increase the level of state support as well as Federal support for education at this level.

The target population may be expected to include a wide range of age level groups of persons who will use the community college to meet many educational needs. When the potential number of persons who may be served in 1980 is projected upon the current enrollments in exemplary community colleges, the ratio of students in each 1000 of the total population would represent twice as many students in 1980 as are now attending — 4,500,000 students. However, if all states should provide education at this level in the same way as is now available in one or two of these colleges, the total could be as high as 12,000,000 students. The potential target population then is representative of the entire population who are beyond the high school age level and may *range in number from 4,500,000 to 12,000,000 students.*

Patterns of Financial Support

A wide variety of patterns of support for community colleges exist among the 50 states. Little commonality is found among the states in regard to sources of support for operating expenses or for capital outlay. Although this particular investigation has not given specific attention to sources of financial support, one of the concomitant studies has provided basic information which is summarized here.

Arney's study[24] has shown that state contributions for community college support varied from 4 percent of the current operating funds up to 100 percent. He also pointed out that one-half of the states which were supporting community colleges in 1967-68 provided less than 50 percent of the current operating funds.

The remainder of support came for the most part from local funds and from student fees. Student fees were the source of 20 percent or more of the current expense output in more than half of the states.

Federal funds have not provided a major source of support for community college programs up to the present time. While a few states report that Federal funds are used for capital outlay and for special programs, there is a wide disparity among the states in regard to the part that the Federal funds play in supporting the total community college program.

The current support patterns for community colleges are not the same as were commonly found a few years ago. There is more state support and a trend toward increasing support from this source. The need for a balance between local, state, and Federal sources seems obvious although very little analysis of the proper balance has been considered as of this date.

The financial support of community colleges has usually come from four major sources: local, state, and Federal tax sources plus student tuition. Supplementing these sources, but comparatively small in amount, are gifts and surplus funds from auxiliary services. The major source of support in the past has been local funds combined with student tuition — this has amounted to more than half the current operating funds. There is at present, however, a trend toward greater state support as well as an increasing emphasis upon Federal support.

Anticipated Needs

The anticipated needs for supporting the community colleges will depend upon the extent of this development in the various states. If the target population is served in an adequate manner, the current enrollment found in a few states may be used to project the requirements for the future. The possibility that at least twice as many students will be served in community colleges as are currently served is considered to be a reasonable prediction. The potential for educational service is as high as almost six times the current enrollment.

This specific investigation has not provided direct attention to the anticipated needs. However, related research does provide a basis for developing certain conclusions which will provide some answers to these questions.

Fowler's study[25] of current operating costs for programs in community colleges indicated that the range of expenditures per student for the year 1968-69 was approximately $600 to $3700. A median cost of $1353 might be assumed as reasonable. If this is projected for the current enrollment of 2,000,000 students enrolled, one may assume a current annual expenditure of $2.7 billion nationwide.

Without considering any increasing costs, a straight line projection would result in an estimate of $6.2 billion for 1980. This is not, however, a sound basis for projecting needs. As has been pointed out, these current expenditure levels not only do not consider the cost differentials in the various programs but also do not provide adequately for current needs.

If the assumption is that a much more adequate financial support program will be developed, then the following anticipated needs should be considered:

1. The potential number of students to be served in community colleges will likely be at least twice the number currently enrolled, perhaps even as much as five or six times the current enrollment.
2. There will be an increasing emphasis upon occupational and career programs at this level. These are more expensive than the liberal arts (general) programs.
3. There will be larger numbers of older youth and young adults involved in the community college programs. These will be enrolled on a part-time as well as a full-time basis.

4. There will be increasing emphasis upon multi-campus colleges with services made available on a broad geographical basis.

5. There will be increased concern relative to recruiting students who might not otherwise be knowledgeable about this opportunity.

6. There will be an increased emphasis upon intensive utilization of resources, and upon more carefully developed management information.

The anticipated needs for supporting community colleges are based upon financial needs which may be projected upon current expenditures. These would envision a 1980 expenditure of 6.2 billion in 1969 dollars. This figure, however, is not an adequate representation of the anticipated needs. Consideration must be given to the target population, the curriculums they need, and the ways in which more efficient, effective, and comprehensive education can be provided.

Cost Differentials

Data collected from the 15 exemplary community colleges provide a basis for analyzing the cost differentials among the various programs in these community colleges. Since all colleges do not keep records in the same manner, these data were somewhat difficult to ascertain as well as to analyze for comparative purposes. The decision to develop a ratio in each institution by using the average credit hour cost for liberal arts as a divisor produced a cost differential in each institution that was not specifically related to the amount of expenditure. These ratios, then, were used as a basis for comparison from institution to institution.

Fifty-six programs in the 15 colleges were analyzed. The costs of the majority of the occupational programs exceeded those of the liberal arts programs. The average cost differentials ranged from .99 in business administration courses to 2.11 in chemical engineering technology programs. These averages were used only when three or more programs were identified in as many colleges. A few cost differentials were even higher but these were found in only one college. These were 2.33 for a mechanical drafting program, 2.13 for a bioengineering technology program, and 3.13 for a sheet metal worker program.

Several influences on cost differentials were noted as data for individual institutions were analyzed. For example, one college which was fairly large in enrollment consistently had smaller differentials. A primary factor influencing cost differentials was the enrollment. Since programs are of different length, that is some require two semesters, most four, but a few even five or six semesters, the total program cost may be greater than the cost differential which is equated on a cost per student credit hour. Non-credit courses were equated, of course, for this comparison.

The overall conclusions may be summarized as follows:

1. Most of the business oriented programs are comparable in cost to the liberal arts programs.

2. The liberal arts programs which emphasize science or engineering are more expensive than the general programs but less expensive than technical education programs.

3. Special requirements such as rent on data processing equipment cause some programs to report a high cost differential.

4. New programs often have a higher cost differential during early years than will be true later.

5. Consideration of expenditures for capital outlay will increase the cost of a program as much as 22 percent in data processing, 21 percent in a machinist program, or 20 percent in automobile mechanics.

By analyzing cost differentials one is able to ascertain the relative costs which are incurred in the various programs of a comprehensive community college. It is clear that a college which offers more variety in its program will cost more to operate than one which is limited to the liberal arts programs. All occupational programs except those related to business are more expensive to operate than the general education programs. In some instances this differential is more than 100 percent higher. When an estimate of equipment costs is included, the differential is even greater. In those colleges which are beginning to approach a ratio representing an equal number of students in each type of program, the overall current operating expenditures will be larger than at present because of the higher costs per student of the occupational programs. These factors must also be considered in the estimates of future needs in the community college.

Other Cost Analyses

In addition to the cost differential, the researchers examined the budgetary allocations and the distribution of operating expense over various allocations in order to assess in some measure the priorities which appear to exist within the community colleges.

It was readily apparent that the cost of instructional salaries is the greatest operating expense. Over one-half of the total expenditures are allocated to this purpose. Other categories include general administration, 10 percent; instructional resources, 5 percent; student personnel services, 9 percent; supportive instructional costs, 10 percent; and auxiliary services, 4 percent. There was an apparent similarity in these categories among the colleges which were analyzed.

When individual divisions were examined it became apparent that there were some differences between programs that remained consistent from college to college. The percent of the total budget spent on occupational programs when broken down indicated a higher percent of that budget category spent on instructional salaries than was true in the liberal arts and sciences. Conversely, in the liberal arts a greater portion of the budget category was allocated to administrative services than was found in the occupational courses. These relationships may be very much involved with the enrollment relationships as well as program costs. Other services carried out by the college such as student personnel services, operation and maintenance of plant, and instructional resources were noted because the liberal arts and sciences budgets showed a larger percent allocated to these items than was the case with the occupational programs. The reverse was true only in the category of instructional resources.

Corrick[26] noted that the major decisions in allocating resources in a community college were those decisions related to faculty salary. Matthews[27] concluded that positive relationships could be identified between the percent of budget allocated to student personnel services and student completions of liberal arts programs as well as the percent of the total budget allocated to instructional salary and the employment of graduates on jobs related to the occupational area. Both of these studies indicated that decisions related to the allocation of resources to salaries would appear to be the most important decisions in community college budget preparation.

Despite experiencing some difficulty in obtaining sufficient information for analyzing budget allocations, the researchers were able to identify certain budget categories and to analyze the allocations for these.

Since instructional salaries make up the largest percentage of current operating costs, the determination of this item in the budgeting of available resources will have direct influence upon the total expenditures in a manner unrelated to availability of resources. This will be especially important wherever salary levels become negotiable items directly influenced by agents outside the college itself.

RECOMMENDATIONS

As a result of this study, the following recommendations are made:

1. Better data collecting methods should be developed.

2. Federal and state legislators should be encouraged to become familiar with the differentials in program cost and to recognize this information in determining appropriations.

3. Longitudinal studies initiated at college level to ascertain pertinent program and student data are very much needed.

4. There continues a need to construct models of support for community college education. Trends in current support patterns indicate that there is a tendency to deemphasize local support for this level of education.

5. As models of support for community colleges are developed, consideration should be given to those colleges on state borders in terms of their relationships to adjacent states and the extension of the college attendance district across state lines.

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CHAPTER 7

Financing Public Elementary and Secondary School Facilities

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AND
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The purpose of the National Capital Outlay Project was to survey the legal bases, procedures, and practices which the 50 states, as of 1968-69, utilized in providing funds for elementary and secondary school construction, related debt services, lease-rental arrangements, and lease-purchase of facilities; and, further, to analyze the underlying theories of the above arrangements, the rationales, and the programs for intergovernmental transfer of funds related to capital outlay. The final phase of this satellite project consisted of the development of alternative fiscal models for allocation of funds, ranging from complete local support to complete state and Federal support of public school facilities.

This project was conducted by the Bureau of Surveys and Administrative Studies, School of Education, Indiana University, in close cooperation with several midwestern universities, namely Indiana State University, University of Nebraska, and Western Kentucky University. The staff, in cooperation with other researchers and field representatives, made field visits to over half of the states. Financial and legal specialists in the state education agencies of each of the 50 states, without exception, cooperated in providing and interpreting financial provisions for capital outlay and related expenditures throughout the entire nation. Specialists in the U.S. Office of Education also provided invaluable assistance.

POSTWAR FINANCING OF PUBLIC SCHOOL FACILITIES

Financing of elementary and secondary public school facilities is a major part of the overall problem of financing educational facilities at all levels. Provision of funds for nonpublic educational facilities, higher educational facilities (public and private), and educational facilities for preschool and adult programs has also encountered problems. During a period of program expansion, inflation, and resistance to increasing taxes, where and how can the necessary funds be provided?

The National Capital Outlay Study was concerned only with the financing of public school facilities — elementary and secondary. Junior colleges and other higher educational institutions, facing grievous financial problems, were not included nor were private schools. Financing public junior colleges was the subject of another special study of the National Educational Finance Project.

Financing school facilities is conducted within the public sector of the economy and is affected by needs and demands for other public construction. Hospitals, highways, governmental buildings, airports, rapid transit facilities, higher educational facilities, and other facility needs have a major financial impact on all levels of government. Financing public schools is only one of a host of financial problems which is the concern of the Federal, state, and local governments. The National Capital Outlay Project was conducted with an awareness and a recognition of the fiscal implications of the needs and demands for all public facilities. The fiscal implications of the need for residential housing were also apparent.

A 1966 study prepared for the Subcommittee on Economic Progress of the Joint Economic Committee, Congress of the United States, reported that a total of $499.1 billion would be needed during the ensuing decade in order to meet state and local public facilities needs. Of this amount $82.2 billion, or 16.5 percent, was needed for educational facilities.[1]

SCHOOL FACILITY NEEDS IN THE 1970's

The period following World War II witnessed the greatest school building boom in the nation's history. United States Office of Education statistics show that from 1949-50 through 1967-68, annual capital outlay for public schools rose from $1.014 billion to $4.300 billion; local funds rose from $950 million to $3.548 billion; state funds increased from $43 million to $512 million; Federal capital outlay for schools grew from $43 million to $76 million; and school construction by authorities increased from $21 million to $164 million. Of the total $4.3 billion provided for school construction in 1967-68, local funds accounted for 82.5 percent, state funds for 11.9 percent, Federal funds for 1.8 percent, and authority financing for 3.3 percent.[2]

Sale of bonds has been the dominant means by which local governments have carried the major financial burden for construction of facilities. In 1967-68, bond sales in the amount of $2.917 billion provided 86 percent of funds for capital outlay.

From 1949-50 to 1967-68, the annual number of new classrooms constructed increased from 30,900 to 75,400 while, respectively, the average expenditure per new classroom increased from $32,815 to an estimated $67,432. Inflation has accounted for part of the steadily increasing capital expenditures. Since 1959, labor costs have increased more than 50 percent while costs of materials have risen an average of one percent annually. The index of school construction costs since 1959 has increased from 100.0 to 134.2 as estimated by *School Management.* Average costs per classroom constructed in 1968 in the nation ranged from a high of $79,151 in Pennsylvania to a low of $30,681 in Mississippi.[3]

Not only have sales of school bonds increased, but average net interest costs for all issuing agencies have also risen from 3.91 percent in 1959-60 to 4.88 percent in 1968-69. Nationally, from 1949-50 to 1967-68, capital outlay per pupil rose from $40.38 to $96.66, and per pupil expenditures for debt service rapidly increased from $12.53 to $53.95.

Public school construction needs result from a variety of conditions such as increased enrollments, broadened content and scope of educational programs, and provision of programs related to special societal needs. Many needs, although recognized, remain unmet. Consequently, a backlog of needed construction constantly faces the nation. The Task Force on Public School Facilities of the Office of Education estimated that a backlog of 519,300 needed classrooms existed as of the fall of 1968.[4]

An unofficial memorandum by the Office of Construction Service estimated an annual public school classroom need of 123,813 during the decade ahead.[5] Staff members of the National Capital Outlay Project, assuming an average construction cost of $63,000 per classroom unit, estimated an average public school capital outlay need of $7.8 billion (in 1968-69 dollars) during the 1970's. Additional annual revenues in excess of $3 billion will be needed to close the gap between this amount and the annual revenues provided in 1968-69.

SOLUTIONS

In terms of solutions to public school fiscal problems, four major avenues are open to state and local governments: (1) state and local indebtedness can be increased; (2) state and local user charges and miscellaneous fees may be raised; (3) structural changes can be made in state and local tax systems; and (4) Federal grants-in-aid may be increased. If no solution is found, the nation faces a partial moratorium in respect to public school construction. Millions of children will be ill-housed and ill-educated. If education is to meet the societal needs of the nation, facilities required for programs of early childhood education, education of the handicapped, compensatory education, and vocational and adult education must be provided or the potential of the educational programs cannot be realistically attained.

Cooperative Federal, state, and local financing of public school facilities must be developed, if schools are to provide the special programs demanded by our society. Local school districts can no more be expected to provide the facilities needed for the nation's educational needs than they can be expected to provide for the nation's interstate highways, airports, and hospitals.

An increase in capital outlay from $4.7 billion in 1968-69 to approximately $7.8 billion during the 1970's can be accomplished only if concerted and cooperative financial effort is made at all governmental levels, if effective allocation of funds is employed, and if substantially increased current appropriations by Federal, state and local governments are made. Economic conditions in the early 1970's may preclude the continued use of indebtedness as the major source of school construction funds to the extent that it has been used in the past.

LOCAL PROVISIONS FOR FINANCING PUBLIC SCHOOL FACILITIES

Historically, local school officials have been responsible for financing, constructing, and inspecting public school facilities. Conventional methods of providing funds for school construction have been school bond issues and appropriation of local funds. Some states have chosen to devise alternate methods of local school facility financing while maintaining existing debt and tax limitations. Public and private authorities, state grants, and state loans have been the most frequently utilized alternate methods.

Local funds accounted for an estimated $3.5 billion, or 82.5 percent, of the $4.3 billion allotted for public school facilities in 1967-68. Despite maximum effort in many school districts, the backlog of needed facilities has increased.[6]

All states, except Hawaii, imposed either constitutional or statutory limitations on the amount of debt that could be incurred in the local school districts. Ordinarily the school debt limit is based on a fixed percentage of the assessed valuation of property. The inconsistencies inherent within the assessment practices of the states make comparisons of debt limitations unrealistic. In 1966 the actual property assessment practices ranged from a low of 4.6 percent in South Carolina to in excess of 60 percent in Alaska, Florida, Kentucky and New Jersey. Alabama, Iowa, and Pennsylvania required that debt service levies be included in the general fund levy. Other states provided for an unlimited debt service levy and rate. Thirty-five states stipulated a maximum interest rate in the six to eight percent range. Eleven states did not restrict the interest rate for general obligation school bonds. As net interest costs continue to increase, it would appear that adjustments will be necessary in the permissible interest rate for general obligation bonds in the various states.

In at least 40 states local boards of education were permitted to initiate bond sales for the school district. This implied that the sole responsibility for the bond sales rested with the local district. A few states required that two or more separate agencies approve the initiation of the bond issue.

Thirty-two states required only a simple majority of those voting in the special election for the approval of bond sales; 14 states required a favorable vote in excess of 50 percent. The constitutionality of the requirement for more than a majority vote for passage of a proposed bond issue is in litigation in several of these states.

Revenue bonds and/or short term loans are frequently used by local school districts in lieu of, or as a supplement to, general obligation bond issues for capital outlay. Such methods of borrowing have greater risk than general obligation bonds and normally command higher interest costs.

In addition to borrowing, other methods accounted for nearly $1 billion in school construction funds in 1968-69. Among the other methods were pay-as-you-go, building reserve funds, gifts, donations, insurance settlements, and the sale of school property.

In 41 states local school districts were authorized to establish building reserve funds. The extent to which the funds were utilized varies. For example, local districts in Indiana collected more than $75 million in building reserve funds in 1968-69, but in Nevada no school district levied a tax for this purpose in that year. It was common among most of the 41 states to have legal restrictions on the levy and to require local approval for building reserves. The property tax was the dominant source of funds for the building reserves in all states except Vermont. Several states permitted nontax sources such as surplus balances, state funds, gifts, and donations to accrue to the building reserves. All states with provisions for local building reserve funds permitted such reserves to be used for construction purposes.

The amount collected for local building reserves during the 1968-69 fiscal year was approximately $341,902,943. (This total reflects the data provided by 26 of the 41 states having building reserve funds; no information was provided by the remaining 15 states.)[7]

STATE PARTICIPATION IN THE FINANCING OF PUBLIC SCHOOL FACILITIES

Giant strides have been made in state participation in the financing of public school facilities during the past two decades. In 1968-69 state grants for public school capital outlay or debt service, state school construction loan programs, and state school building authorities were reported by 35 states. More than $750 million was made available to local school districts for construction during the year in those 35 states.[8]

Grant Programs

Some of the state programs have been in existence for a period of years; others were special programs of limited duration. In 1969, 25 states were granting funds to local school districts for construction and/or debt service purposes. In addition to these 25, Hawaii was financing all school construction with state funds. Amounts of state grant funds available for selected years were:

1950-51	$ 78 million
1956-57	187 million
1962-63	325 million
1968-69	632 million

In addition to outright grants made by the several states, California and Ohio utilized state loan programs with provisions for forgiveness of significant portions of the loans. Other indirect state aids for school construction took the form of interest subsidies through state purchase of local bonds at lower than prevailing market interest rates and state loans at low interest rates. Several states granted some funds with usage left to the discretion of local school districts; presumably some of these funds could be used for school building purposes.

Purposes. Grant programs afford property tax relief, broaden the tax base of local districts, and can enable fiscally impoverished school districts to provide needed school buildings. Some grant programs are designed to provide incentives, particularly for school district reorganization.

Most state grant programs permit local districts to use receipts for construction and/or debt service purposes. Several of the state programs incorporate equalizing grants, but most state programs utilize some type of flat grant.

No state reported programs with grants based exclusively upon locally determined costs. The typical needs measure was the pupil unit, the classroom unit, or a predetermined (by formula) portion of "approved" project cost.

States obtained funds for grant programs from legislative appropriations, proceeds of state bond issues, earmarked tax receipts, permanent fund income, or some combination of these.

By 1968-69, 26 states were granting funds to local school districts for school construction, debt service, or lease-rental purposes. The extent of state participation ranged from the totally state financed system in Hawaii to token grant programs in Missouri and Illinois. The concept that state participation in financing school construction is necessary and desirable appears to have gained acceptance in 22 of the 50 states, since each of these states had grant programs dating from 1956-57 or earlier.

Advantages and Disadvantages. Grant programs have the advantage of making state financial resources available to the local school districts while permitting the responsibility for school construction to remain primarily in the hands of local school officials. Since few state funds are derived from the property tax, the localities are afforded property tax relief, regardless of whether or not the grants are "flat" or "equalizing." Stimulation of local fiscal effort and incentives to meet school facility standards can also be accomplished by state grant programs. Marketability of local bond issues is usually enhanced by the infusion of state funds, since this has the effect of broadening the local tax base, which is the security for the bonds.

One of the principal objections to grant programs is that the recipients may not be as prudent with expenditures as would be the case if all funds were locally derived. Other objections are that matching grants might cause local expenditure patterns to become distorted in order for the local district to participate in the grant program and that a multiplicity of grants may unduly complicate the school finance program within a state.

Well conceived and administered grant programs can probably make a strong contribution to the viability of local school government. Examples of some excellent programs are already in existence in a few of the 26 states now granting funds to local districts. Florida, Georgia, Indiana, Kentucky, Maryland, Massachusetts, New York, and Pennsylvania are among the states which distributed significant amounts of state funds to local districts in 1968-69.

Loan Programs

Recent research, conducted as part of the National Capital Outlay Project, has identified programs in 14 states which provided for loans of state or state controlled funds to local units of government for the provision of public school facilities in 1968-69. The study included investigation of the founding dates of the programs, the specific purposes, the sources of funds, the controlling agencies, the loan requirements, and the significance of the programs in each state. Conclusions were drawn concerning advantages and disadvantages of state loan programs for financing public school facilities.

Findings. Although most of the current state loan programs have originated since World War II, the concept is far from new. Virginia's Literary Fund has functioned as a school loan program since 1810, and the Wisconsin loan program began in 1844.

State loans to local units of government for school facilities serve different purposes. The obvious and primary purpose is to make it financially feasible to provide school facilities. Secondary purposes of state loan plans are the evasion of local debt or tax limits, strengthening of marketability of bonds by financially weak local districts, and state level involvement in school plant planning.[9]

Loan funds for capital outlay in 1968-69 were permitted in 14 states, but Michigan restricted loans to use for debt service payments. Minnesota loaned funds for both debt service and capital outlay. Arkansas and Wisconsin permitted loans for both capital outlay and refunding of existing debt.

North Carolina, Virginia, Wisconsin, and Wyoming relied solely on permanent school funds as a source for loan funds. Arkansas supplemented its permanent school fund by borrowing from the Teacher Retirement System. State bonds supplied loan program funds in California, Connecticut, Maryland, Michigan, Minnesota, and Ohio. Only Illinois and North Dakota appropriated funds from general state revenues for their programs. Indiana was unique in operating two loan funds, one based on permanent school funds and the other on surplus funds from a veterans' bonus account.

Eight of the 14 states, California, Illinois, Indiana, Maryland, Minnesota, North Dakota, Wisconsin and Wyoming, used special boards or commissions to control the awarding of loans. The loan programs of the remaining states were controlled by either the state board of education or the state department of education.

Special requirements for loans varied widely among the states. The measure of need and existing debt were factors in all states except Wisconsin. In states with legal debt or tax levy limits, it was common to find requirements that local districts be at or near these limits before qualifying for a loan.

Significance. The significance of state loan programs was measured in terms of the percentage which the loans committed in 1968-69 were of the total new debt acquired during the same period. State loans represented over one-third of new school district debt during 1968-69 in Arkansas and Virginia. North Dakota supplied 27.4 percent of new debt for schools through its loan program. The remainder of the states loaned from 13.9 percent to zero percent of the new 1968-69 school debt.

The significance of state loans to the individual states was also evaluated by comparing the interest costs of state borrowing to local district borrowing. California, Illinois, Ohio, and Wyoming charged no interest for loans to school districts; Maryland, Michigan, and Minnesota based rates on costs to the state of borrowing; and the remaining states typically charged interest rates substantially below open market costs. The United States Office of Education[10] reported that the net interest costs of school purpose bonds sold in 1968-69 by the states averaged 4.02 percent while those sold by school districts averaged 4.83 percent.

Conclusions

The following conclusions concerning the advantages of state loan programs for financing public school facilities were made:

Advantages. 1. Funds for schools can generally be borrowed more economically by states than by local school districts.

2. State loan programs maintain a share of the fiscal responsibility for school buildings at the local level.

3. Funds can be made available for schools on the basis of need rather than on the basis of a district's ability to borrow funds on the open market.

4. Loan programs can involve state participation in the planning and locating of school buildings. This should result in better quality buildings and better districting.

5. State loan programs can and are used to overcome unrealistic debt and levy limitations.

Disadvantages. 1. State loans do not relieve financially distressed districts of their burden.

2. State loans from dedicated or fixed amount funds are generally inadequate.

3. Appropriations from a state's general revenues may be subject to political pressures.

4. Objective methods of awarding loans are difficult to develop and maintain.

5. Local control may be weakened through loan program requirements.

FEDERAL PARTICIPATION IN FINANCING PUBLIC SCHOOL FACILITIES

The historical pattern of Federal participation in financing elementary and secondary school facilities does not reveal any evidence of a general long-run continuing Federal support for school construction. Federal support programs have followed the general principle of serving a special need perceived to be in the national interest rather than providing direct support to a large number of school districts on a long-term basis.

Possibly the sole exception is found in the Federal public works programs which existed during the depression of the thirties. These activities, however, may provide another example of a national interest (attack on the unemployment problem) on the part of the states and the Federal government which resulted in a construction program to aid local school districts. The merger of the need to resolve the unemployment problem with the need for replacement of obsolete school buildings resulted in the Federal government becoming involved in capital outlay programs in local school districts. Between 1933 and 1943, about 12,500 public school buildings were partially financed by the Public Works Administration and the Works Project Administration. The Federal contribution has been estimated at $611,000,000. The Civil Works Agency and the Federal Relief Administration spent an estimated additional $63,500,000 on public school construction and improvement.

The work of the Reconstruction Finance Commission constitutes another example of Federal assistance with the construction loans being provided for state and local governmental agencies. During World War II one title of the Lanham Act provided funds for local school construction, and the Federal Works Administration constructed buildings and leased them to local school districts. The Lanham Act has been extended through Public Law 815 to provide additional capital outlay support for local school districts eligible for "impacted aid." This program has continued since World War II but seems to be on the decline at the present time.

In an over-simplified fashion the barriers to broad-based Federal support for local school district capital outlay programs may be grouped into two categories — philosophical and logistical. The philosophical barrier has its genesis in the Federal constitution and in the constitutions of the individual states, for education traditionally has been viewed as a state function.

The logistical problems have involved some rather complex considerations — actual administration of the program, general or limited participation, and direct aid, guarantee, or subsidy programs. Direct administration from the Federal level through the Office of Education to local school districts has been vigorously opposed by the chief state school officers and other groups which do not look with favor upon the development of a Federal educational bureaucracy.

The question of general or limited participation suggests the exclusion of certain states or of certain districts within a state. Funds might be made available on a general basis through flat or equalized grants, or they might be restricted to those school districts with need as reflected through outstanding debts or through support of construction projects to replace insufficient or inadequate school facilities.

Two other potential barriers to acceptance and enactment of a broad program are found in the procedures used to determine the number of pupils upon which the allocation will be based and the criteria used to determine the condition of existing facilities. Common data bases among the several states are virtually unavailable.

Even though the Federal government has made relatively few policy commitments in the area of public school construction, that level of government does have an interest in seeing that adequate housing is provided for school children. The rapidly accelerating urbanization of our society, the increasing mobility of the population, and the percentage of school age children attending school provide justification for Federal participation. Only the Federal government, unhampered by state boundaries and local jurisdiction, possesses the revenue generating capacity and flexibility needed to provide an equitable distribution of the funds required to build the needed schools.

Various problems often emerge in any discussion of direct aid programs, but past experience in other Federal agencies does suggest that a school construction aid agency could be developed to issue loans on a direct basis or guarantee loans made by the private sector. The relative cost of this option would be considerably less than a grant program, and some relief would be provided to all districts in a tight money market and to impoverished districts whose fiscal resources are not adequate to provide needed facilities. Past experience suggests that this program would function through a decentralized Federal agency or through state education agencies whose operational procedures have been approved in accordance with Federal guidelines.

Considerable support appears to be emerging for Federal revenue sharing with state and municipal governments. No solutions have emerged as to how schools could be guaranteed an appropriate share of any revenue sharing on the part of the Federal government.

PROGRAMS FOR FINANCING PUBLIC SCHOOL FACILITIES

Considerable detail about existing methods of financing public school construction among the several states was included in the study. In the statutory provisions and functional operation of various state programs, certain features were identified which either aid or inhibit local school districts in their efforts to finance school construction, including funding of current projects and debt service.

As a result of the study of the recent history and current status of various programs, several major problems were identified, and proposals were formulated for the allocation of functional responsibilities among Federal, state and local governmental agencies. Review of previous research in this area and an analysis of existing programs contributed to the identification of a group of basic assumptions which should provide direction in the development of viable models for financing public school construction.

In the latter portions of the study attention was given to the general recommendations appropriate for any program and to alternative programs which may be used to finance school construction.

Problems in Financing Public School Construction

In any general discussion of aid for public school construction throughout the nation two paramount problems emerge—first, many state aid plans are only token in nature, and several states do not provide local school districts with any financial assistance for school construction; second, the Federal government has not provided financial support for any general programs for school construction. Even though title for school buildings may legally reside with the state and education has historically and legally been considered a state function, the entire, or a major portion of, the financial burden for providing housing for educational programs and students has been placed upon the shoulders of the local school district in a great number of states.

This general pattern throughout the nation has resulted in a heavy drain upon local fiscal resources as a source of financial support for school construction. Various constitutional limitations and statutory provisions restrict the latitude available to the local school district by imposing constraints such as the following:

1. Unduly restrictive debt and tax rate limitations in some states, and wide variations among the states in these matters

2. Assessment practices in local districts which do not coincide with statutory or constitutional prescriptions, and wide variations in assessment levels among local districts which result in

property tax bases unrelated to the real fiscal capacity (as measured by property value) of the several districts

3. A property tax base which is heavily relied upon for school construction funds is not immediately responsive to changes in the economy as a whole, does not necessarily coincide with taxpaying capacity, and is regressive in terms of assumption of the burden

4. Voter reactions to property tax rates which suggest that psychological limits may have been reached and that rates may have reached confiscatory levels in many districts

5. An increase in voter rejection of school building referenda, unduly rigid voter qualifications, and provisions which require more than majority vote for passage thereby making it extremely difficult to obtain approval

6. An extremely rapid increase in school construction costs, without a uniformly corresponding increase in revenue potential from property taxes

7. State assistance plans which rely primarily upon loans to aid local districts in meeting school construction needs thereby having the effect of guaranteeing that these districts will remain fiscally impoverished

8. Overdependence upon the property tax, which is also heavily relied upon to support other local governmental functions

9. School district geographical boundaries which result in the isolation of commercial and industrial taxable wealth thereby creating residential areas with low revenue generating capacity

10. Variations in local district facility needs and fiscal abilities which are so extreme that many districts could not meet their needs even if all legal restrictions on local debt and tax rates were removed

11. School districts which frequently must delay needed construction until sufficient funds have been obtained—by which time prices may have risen sharply

12. Recent experiences with a growing economy, tight money market, and high interest rates which have discouraged local districts from initiating needed construction projects

13. Fiscally weak districts confronted with the double penalty of higher interest costs on borrowed funds and higher tax rates to service debt.

In addition to the legal issues outlined in the previous discussion, the effectiveness of capital outlay support programs is further reduced by their inability to respond to problems such as the following:

1. Variations in population mobility among school districts within states

2. Population shifts within school districts to urban and suburban areas which result in relocation of school age population and additional school facility needs even though the total needs of the school district may appear not to have changed

3. Obsolete and instructionally outmoded facilities in urban and rural areas

4. Variations in material, labor, and site costs within a state

5. Variations in construction costs as related to the educational program to be housed, e.g., special education, compensatory education, vocational education, or general elementary and secondary programs

6. School capital needs for most school districts which do not occur on an annual generally predictable basis as do current operation expenditure requirements

7. Tremendous variations in school facility needs among school districts within states.

State constitutional and statutory provisions and state agency regulations frequently function in a negative fashion and fail to provide positive direction or permit responsible, but flexible, administration of capital outlay programs. Typical problem areas are as follows:

1. Restrictive fiscal procedures which prevent local school districts from allocating available funds for school construction in the most economical and/or efficient manner

2. Fiscal accountability procedures which fail to provide adequate assurance that school districts will not divert school construction funds to other purposes

3. Fixed debt service procedures which require that equal portions of the debt be repaid each year

4. Arbitrary limitations on investment of school building funds which result in low earnings

5. Lack of competent technical personnel to assist local school districts in school facility planning and related fiscal matters

6. In many states, continued operation of local school districts which frequently do not meet minimum standards in terms of enrollment or program adequacy and fiscal resources.

Basic Assumptions for Defensible Models

Following the study and analysis of the basic research related to financing school construction programs and the identification of the previously stated problems, basic assumptions were identified. These served as the initial guideposts in the formulation of the general recommendations and in the development of the alternative programs or models for financing public school facilities. These assumptions have not been empirically validated, but are based upon research, general writings in the fields of school administration and public finance, and experiences of the authors. Efforts were made to keep the statements brief and succinct; however, their brevity does not diminish their importance, for they serve as the cornerstone for the remaining portions of this chapter. The basic concepts are as follows:

1. The primary purpose of school facility financing programs is to provide funds for housing educational programs which will meet the diverse needs of the total school population.

2. The state has the primary responsibility for establishing school facility standards.

3. Educational facility needs are derived from locally-determined, state-approved educational programs.

4. A mixture of Federal-state-local funding is necessary. Interstate and intra-state variations in facility needs and fiscal capacity must be accommodated in allocation procedures.

5. Retention of fiscal leeway is a necessary condition for the proper functioning of any school facility financing program, whether the source of funds be local, state, or Federal.

6. Equalization through intergovernmental grants-in-aid is an essential feature of viable capital outlay programs. State loan funds and building authorities can be used to enable fiscally distressed districts to meet immediate facility needs. Emergency allocations for relief of distressed districts and similar stop-gap measures only provide temporary relief, and should not be considered as an adequate state plan.

7. Permissive short and long-term borrowing from varied governmental and nongovernmental sources and appropriations from all levels of government are options which must be available to local districts in planning facility financing programs.

8. Long-range planning for construction and financing school facilities is an essential element in fiscally sound local school district construction programs.

9. Provisions of school facility financing programs should be responsive to changing economic and sociological conditions, but also should be sufficiently stable and predictable to facilitate long-range planning.

Logical Functional Responsibilities by Governmental Levels

For the three-way partnership of local, state, and Federal participation in financing public school facilities to be effective, certain responsibilities logically should be assumed by each level of government. In the process of allocating these responsibilities extreme care has been exercised to assure that the appropriate legal responsibilities of each level of government would not be eroded or subverted.

Federal Responsibilities. Tradition and the legal structure of public elementary and secondary education dictate that the Federal government play a somewhat restricted role in financing school facilities. The following three broad areas encompass the major responsibilities which the Federal government should assume:

1. Providing broad-based, continuing assistance in public school facility financing. The national interest, disparities in wealth and facility needs among the states, and superior revenue-generating potential of the Federal government are compelling arguments for general Federal participation in public school capital outlay programs.

2. Funding of facility construction programs for the following special purposes:
   (a) Stimulation of development of educational programs of critical national concern
   (b) Promotion of research, development, and demonstration phases of projects directed toward solution of special educational problems
   (c) Development of alternative construction and design procedures
   (d) Fulfillment of the Federal government's obligation as a land owner and employer for payments in lieu of local and state taxes
   (e) Provision of funds to replace facilities in local school districts which have been declared disaster areas.

3. Gathering, compiling, synthesizing, and analyzing comparable data on a periodic basis for the several states with respect to school facility need. (The planning grants originally provided through Title I of Public Law 815 constitute an excellent example of a possible operational approach.)

State Responsibilities. Legal responsibility for all aspects of education resides with each state; therefore, the state through its legislature and various state agencies should have a high level of interest in concerns associated with adequate educational programs, adequate school facilities, adequate fiscal and technical support, quality control, and fiscal accountability. Functional operation and decision-making may be decentralized to local school districts, but this should not result in reduced accountability. In an effective program the state should have a multiplicity of educational, fiscal, and administrative interests such as the following:

1. Financial participation in providing for local school district facilities

2. Development of comprehensive state plans which provide for:
    - (a) The restriction of school construction to permanent school centers in adequately organized districts
    - (b) Objective methods for determining need, with educational needs being the prime determinant
    - (c) Determination of both immediate and long-range construction needs
    - (d) Adequate and enforceable space, site, environmental, and material standards for construction and rehabilitation
    - (e) Fiscal accountability procedures for participating school districts
    - (f) Preservation of local leeway for environmental or enrichment purposes
    - (g) Alleviation of variations in local fiscal capacity
    - (h) State technical assistance to local school districts in legal, administrative, and fiscal matters relating to school facility financing
    - (i) Permissive cooperative financing of facilities to house school and non-school programs.

Local Responsibilities. In virtually all states local school districts were formed as a matter of administrative convenience and necessity in the operation of schools. A constant process of evolution has kept these districts in a state of change as schools have been consolidated or districts have been reorganized. However, the challenge to develop, staff, and house educational programs has continued to be a responsibility of the local district. The interrelationships which exist between educational program and facilities, varying local conditions, and the historical tradition of local district decision-making dictate that major responsibilities for planning and constructing school facilities be assigned to local school officials. This does not suggest an abdication of state responsibility, but permits local flexibility and casts the state in a leadership and advisory role.

In this discussion, a local district has been defined as any single local district, combination of districts, or school district organization which is sub-state. Typical responsibilities to be allocated to local school districts are as follows:

1. Studies of immediate and long-range facility and financing requirements
2. Administration of construction projects and development of fiscal planning for specific projects
3. Coordination of school facility planning with long-range and short-term plans of other governmental and community agencies
4. Financial participation in the provision of school facilities if prescribed as a condition for support from other sources
5. Use of local leeway fiscal capacity for exemplary, experimental, or enrichment purposes.

ELEMENTS OF A FISCAL MODEL

A detailed analysis was made of the characteristics of existing state programs for financing public school facilities. After considering the features which should be an integral part of a state program, four essential elements were identified. These serve as the skeletal framework for the fiscal programs in the final portion of this chapter.

The four elements are determination of needs, allocation procedures, use of proceeds, and source of funds. A brief discussion of the characteristics of each element is presented in the following paragraphs.

Determination of Needs. Formal programs for granting or loaning funds for elementary and secondary school construction have tended to identify elements of need which can be objectively determined and quantified. A number of states require approval of local building projects for which state grants or loans will be sought. After a project has been approved, a determination is made of the "approved project cost" based on the number of pupils to be accommodated and the program to be housed. The approved project cost is utilized for determining the amount which the state will grant or the amount which the state will loan. This amount may be determined through the application of an objective formula. Factors relating to program would be based on standardized space and facility requirements, and those relating to dollar costs would be based on state or regional construction indices derived from acceptable sources.

Another alternative is to determine the cost of an "approved project" which may include construction costs, engineering and architect fees, site costs, and other costs such as those related to sewage treatment plants, site development, and equipment. Statutory provisions or agency regulations might provide for exclusion of specified items such as costs of site development, movable furnishings, access drives, auditoriums, swimming pools, and spectator gymnasiums. Objectivity in state grant or loan programs requires that limitations and exclusions be clearly defined and predetermined by statute, rule, or regulation.

If a grant program is to be included in the state foundation program, the units of need—whether pupil, classroom, or instructional—should preferably be expressed in the same terms as in the foundation program. For example, a stipulated dollar amount per square foot for an approved project may be applied to a schedule of space allotments which varies with the number of pupils to be accommodated.

The foundation program may include a specified amount for capital outlay and debt service; a classroom depreciation allowance may serve as the base with additional funds being provided to recognize rapid enrollment increases. If capital outlay grants are included in the foundation program, adjustment in the required local share would be in order.

Allocation Procedures. In accordance with the objectives of the support program in a specific state, grants may be for uniform amounts, may vary inversely with local fiscal ability, or may be on a percentage basis. Grants may be in lump sum amounts, but are usually spread over a predetermined number of years. The latter procedure has been used in states where school building authorities or state loan funds supply substantial amounts of construction funds. Funds for authorities are normally secured through the sale of revenue bonds. State loan funds may be provided through legislative appropriations, existing reserve funds, or sale of revenue bonds. Greater interest savings can be gained through the first two sources; however, the last option may also be economical since the state rather than the school district would be the guarantor of the securities.

Loan funds, authorities, and local borrowing, in accordance with the macroeconomic viewpoint, result in debt which is payable in the future. Although the macroeconomic and microeconomic viewpoints differ in their impact on the public debt, one effect is crystal clear. If the debt is assumed in its entirety by local school districts, debt service and lease-rental payments will almost invariably be paid by property taxpayers.

State loan plans and school building authorities which provide for state and Federal participation in the costs of debt service and lease-rental payments can make possible an effective mix of payments from nonproperty tax sources, thus alleviating the regressive effect of payment from only local property tax sources. This may be a moot point, for the municipal bond market in 1970 does not have the funds available to meet the need for school construction funds throughout the nation. A shift from dependence on long-term state, authority, and local bonds seems inevitable, as shown by legislative studies in California, Ohio, and other states.

Use of Proceeds. Several alternatives for use of proceeds of state capital outlay grants are feasible. The proceeds of state or Federal grants may be directed immediately into construction accounts, together with any required local funds, or they may be used as invested construction reserve funds until contracts require payment. The latter approach is feasible only for short periods of time, if necessitated by delays in progress of construction.

Occasions arise where construction funds are available, and where state or Federal fiscal policy may appropriately be directed toward sharing of debt resulting from loans or bond sales or from lease-rental contracts with school building authorities or similar agencies.

A central government, state or Federal, may recognize that all buildings experience depreciation and may wish to base the distribution on a computed depreciation allowance. In this instance, funds may logically be utilized for construction, debt service or similar payments, or may be accumulated in construction reserve funds. Unmet facilities needs and inflation of construction costs both argue against the latter.

Another alternative may be for the allocation to be used for debt service or present projects until that need is exhausted, and then for local school officials to have the option of using the allocation to meet current operating costs. This choice may be in conflict with the basic intent of the program, but districts which have made prior effort and have no present need are provided with effective tax relief through this alternative.

Source of Funds. Current expenditures of public elementary and secondary schools, except in Hawaii, come from Federal, state, and local governments. Local funds are derived from property taxation in most states. Federal and state funds, in general, are from nonproperty tax sources. In some instances, both in the United States and Canada, some area larger than the district and smaller than the state provides some funds for local schools. Regional agreements, area financing, county and intermediate unit financing, and metropolitan or other area financing may logically be utilized. Such arrangements can broaden the available tax base and tend to equalize school tax effort; however, they may result, in some instances, in the delay of needed reorganization of local school districts. Sources of funds suitable for current operation are often practicable for meeting school construction financial needs; however, this approach may result in fluctuating tax rates which are misunderstood by local taxpayers.

If appropriate models for allocating funds can be devised, revenues can be derived from various combinations of local, state, or Federal sources and even from metropolitan areas which embrace several school districts lying within a state or across state boundaries. An annual need of approximately 124,000 new classrooms at an annual cost of $7.8 billion suggests the desirability of a concerted and orderly use of all available sources. There is a need for less reliance on borrowing and for more support through appropriations for capital outlay by all levels of government. If public school space needs are to be met during the 1970's, short-term indebtedness, state and Federal participation in debt marketing, and state and Federal grants for construction, debt service, and lease-rental payments must increase.

General Recommendations

In subsequent portions of this chapter specific alternative state programs are presented; however, certain general recommendations are considered essential in the implementation of an effective program for financing public school facilities. The concept of local responsibility for decision-making with state oversight and review underlies each of the general recommendations and is considered to be an integral part of any fiscal program. One of the intents in this series of programs is to devise a structure through which an orderly process of facility and fiscal planning will be expedited, and another is to focus attention on administrative and procedural items which will facilitate program administration and provide maximum equity for local school districts and the general citizenry.

1. Any program for support of capital outlay should include the following items in determination of needs:
    (a) Adjustments related to fluctuating annual costs
    (b) Adjustments related to enrollment fluctuations
    (c) Recognition of the varying fiscal capacity of governmental units
    (d) Recognition of all essential elements of construction costs, e.g., site development, equipment, furniture, fees, and like costs
    (e) Recognition of variations in costs associated with educational program to be housed
    (f) Recognition of prior effort
    (g) Restriction of new construction to permanent school centers in adequately organized school districts.

2. Programs for support of capital outlay should facilitate funding flexibility through:
    (a) Provisions which permit a mix of current and borrowed funds
    (b) Provisions which facilitate an appropriate mix of Federal, state, local, and private funds
    (c) Provisions which facilitate both long-term and short-term funding
    (d) Provisions which permit local districts to have tax leeway or bonding capacity leeway.

3. Since a program for capital outlay involving only state and/or Federal loans postpones assumption of the fiscal burden, some type of grant should be an integral part of an program.

4. Support programs for capital outlay should recognize intrastate differentials; in the event of Federal participation, the formula should recognize interstate differentials.

5. State education agencies should be upgraded to assure that local school districts can obtain competent technical assistance to assist in determining facility needs and planning facilities.

6. The state education agency should provide fiscal services to assist local districts in the bonding process including the sale of bonds, possible state purchase, and related procedures.

7. Permissive legislation should be enacted so that school districts could capitalize upon possibilities for cooperative planning or joint occupancy with other governmental agencies; and legislation should also permit local districts to enter into contractual relationships with private agencies for sale, lease, or purchase of air-rights.

8. Arbitrary and restrictive debt levy limits and interest rate limits should be removed.

9. All registered voters should be permitted to vote in a nondiscriminatory manner on referenda related to capital outlay programs, and simple majority of votes cast should be adequate for passage.

10. In the administration of property taxation, states should:
    (a) Review the appropriateness of existing prescribed levels of assessment
    (b) Review the appropriateness of existing exemption procedures
    (c) Standardize assessment practices to reduce the inequities within the among local school districts
    (d) Provide procedures for determining state equalized values in individual school districts.

11. Accounting and auditing procedures should be sufficient to assure sound fiscal accountability procedures, but separate procedures should not be required for participation in Federal programs.

12. The Federal government should subsidize a decennial state by state study of school facility needs.

Alternative Programs

As discussed previously, several fiscal models for cooperative allocation of funds by various levels of government for public school purposes have evolved during the last 50 years. Among these models are those based on the Strayer-Haig theory of uniform local effort, the Updegraff theory of financial incentives for increasing local financial effort, and the Morrison theory of total state support. Numerous variants have been proposed by Mort, Fowlkes, Morphet, Johns, James, Conant, and others.

Existing fiscal models have generally provided for cooperative state and local financing, but may be expanded readily to include Federal financing. They may be modified to include financing from regions or metropolitan areas in conjunction with or instead of local financing.

Finance theories and finance models have been concerned principally with the allocation and distribution of revenues for current operation of public schools. Only slight modification is needed to adapt them to programs for the allocation and distribution of funds for public school construction or related rental payments and debt service.

In designing the alternative programs no effort was made to exhaust the full range of possibilities. The goal has been to identify a selected number of programs which are theoretically sound and provide a range of possible choices for consideration by interested agencies. Four of the eight programs appearing in the report of the National Capital Outlay Project are included in this chapter in condensed form. Program No. 1 is a variant of the familiar Strayer-Haig model. Program No. 4 is an incentive model based on the theory of John Guy Fowlkes. Program No. 7 expressed in instructional units, is an adaptation of Morphet and Johns fiscal models. Program No. 8, using debt service as a measure of need, includes fiscal concepts from a number of sources.

Program No. 1

Variable Grants
Computed on
Recognized Project Cost

State and/or Federal grants are used to support local school construction projects; the grants would vary inversely with local taxpaying ability.

Needs Measure. The recognized portion of total projected cost of each specific construction project would be formula-determined on the basis of items related to the number of pupils and/or programs to be housed. The Recognized Project Cost would not exceed the total cost of the project including site, construction contracts, site development, equipment and related items, with the amount being computed on the basis of a uniformly applicable objective formula.

Allocation Method. The amount of the grant would not exceed the total Recognized Project Cost and would be determined by subtracting the proceeds of a uniform local tax effort from the total Recognized Project Cost.

Use of Proceeds. Funds made available through this program would be used only for specific approved construction projects.

Sources of Funds. Funds for the total project would be provided by the grants and by the local school district. The grants would be derived from state and/or Federal sources. The local share would be obtained from current revenues, loans, or building reserves; local funds would be used to finance the remaining portion of the Recognized Project Costs and any additional costs of the approved project.

Operating Procedures. The following steps would be involved in the project from original design through completion of construction.

1. The local school district would assume responsibility for development of the educational specifications and plans for the facility.

2. The state education agency would determine the Recognized Project Cost.

3. Federal funds utilized in this program would be channeled through the state education agency.

4. The amount of the grant, based on Recognized Project Cost, would be computed on the basis of a predetermined formula.

5. The local school district would develop a fiscal plan to meet the total cost of the approved project.

6. Prior to execution of the formal contract for construction, the fiscal plan would be approved by the state education agency.

7. The local school district would be responsible for executing the construction contract.

8. The local school district would be responsible for receiving the facility and making final payment.

Positive Features. The following features are illustrative of the strengths and flexibility of the program.

1. Funds would be allocated only to those local school districts with recognized facility needs.

2. The amount of the grant would be determined through the application of an objective formula.

3. Only recognized features of a specific construction project would be included in the computation of the Recognized Project Cost.

4. The variable level of state and/or Federal participation in the Recognized Project Cost would foster equalization of the tax burden in local school districts.

5. Grants would provide immediate support for the recognized portion of an approved project.

6. Local leeway possibilities would not necessarily be exhausted as a condition for participation in this program.

7. Multiple approaches could be used in computing the Recognized Project Cost.

8. Multiple approaches could be used in computing the amount of the grant and the residual local share.

9. By modifying the items used in computation of the Recognized Project Cost, the state and/or Federal education agency would have the opportunity to encourage construction to house specific educational programs.

Negative Features. The following items are illustrative of the weaknesses of this approach as the only method of state participation in local school district capital outlay programs.

1. The variable grant for the Recognized Project Cost would result in a high immediate cost for the state and/or Federal budget.

2. Inadequate budgetary appropriations might result in an ineffective level of state and/or Federal participation.

3. Participation would be limited to those school districts with current construction projects.

4. Districts which had made prior construction effort would not receive aid.

5. The fiscal leeway of local school districts with limited fiscal resources might be virtually exhausted as a condition for participation.

Possible Adaptations. Various adaptations such as the following could be used to modify, restrict, or expand the program.

1. The amount of the grant could be a fixed amount or an equalized matching percentage.

2. Instead of the total grant being made at the time of construction, the payments could be apportioned over a period of years.

3. The local school district could be compensated for prior effort through the computation of the Recognized Project Cost of earlier projects and the payments could be apportioned over a period of years.

Program No. 4

Variable Incentive Grant
Computed on
Locally Determined Cost of Project

This program includes state and/or Federal financial participation in local school construction projects with the incentive grant varying inversely with local taxpaying ability; however, the project cost would be the actual cost involved in construction of facilities.

Needs Measure. The project cost would be determined at the local school district level, but planned facilities would have to be compatible with a master plan for the district previously approved by the state education agency.

Allocation Procedures. An objective formula would be used to determine the respective state and local percentage of construction project costs for each school district. The formula would be based on the number of students inadequately housed and fiscal capacity of each district. The respective state and local percentages of construction costs, having been established, would apply to the cost of the entire project.

Use of Proceeds. Funds allocated through this program would be used only for specific approved construction projects.

Sources of Funds. Funds for the project would be provided through the state education agency and by the local school district. The grant would be derived from state and/or Federal sources. The local share would be obtained from current revenues, borrowed funds, or building reserve funds.

Operating Procedures. Operating procedures would be substantially the same as those listed in Program No. 1. A predetermined formula would be developed by the state in order to compute the percentage of state incentive payments to the local district.

Positive Features. The following items are illustrative of the positive features of this plan.

1. The matching procedures incorporated in this program provide incentives for local districts to plan adequate facilities.

2. All districts, including those having low fiscal capacity, can provide comparable school facilities with comparable local effort.

3. Facility needs and specific project plans would be locally determined and could thus foster flexible approaches to meeting unique facility requirements.

4. A desirable degree of state control would be maintained with the requirement for state approval of the master plan of the district.

5. School facility financing would be a shared responsiblity of local, state, and Federal education agencies.

6. The grant feature would provide immediate non-local support for the project.

7. Local leeway possibilities would not be exhausted; incentives for local initiative and adaptation would be provided by the open-ended nature of the matching program.

8. Multiple approaches could be used to determine local fiscal capacity.

Negative Features. The following examples illustrate some of the negative aspects of this plan.

1. Local determination of the nature of the facility might encourage unwarranted expenditure of public funds.

2. The level of required appropriations could have a significant immediate impact on state and/or Federal funds.

3. Inadequate appropriations might result in an ineffective level of state and/or Federal participation.

4. Only those school districts with current construction projects would participate in this program.

5. Districts which have made prior effort would not receive aid.

6. Fiscal leeway of local districts with limited resources might be virtually exhausted as a condition for participation.

Possible Adaptations. Possible adaptations to the program would be very limited because the basic intent of the program would be subverted if significant alterations were made in the fiscal support formula or if certain portions of proposed projects were to be excluded from the program.

Program No. 7

Variable Grant
Computed on the Basis of a
Pupil or Instructional Unit

This program provides for a variable grant distributed on a pupil unit or instructional unit basis (average daily membership) with funds being derived from state and/or Federal sources.

Needs Measure. A state-recognized annual school plant depreciation amount would be computed by dividing the annual cost of school construction in the state by the number of years of anticipated useful service, thus obtaining a Recognized Depreciation Amount. The base amount of the school construction grant would be obtained by dividing the annual Recognized Depreciation Amount by the rated capacity of the above school construction. Rated capacity would be expressed in average daily membership or in the number of instructional units to be housed in the above projects. The uniform base amount would be expressed as $X per pupil or instructional unit.

Allocation Method. Each school district would be required to exert a uniform local effort which would vary inversely with local taxpaying capacity. The proceeds derived from this local effort would then be deducted from the base amount multiplied by the number of pupil or instructional units to determine the amount of the grant.

Use of Proceeds. Funds allocated through this program would be used for debt retirement, current construction, and renovation or rental of facilities. Any unused balance would be reserved for future construction needs.

Sources of Funds. Funds granted for this program would be provided by the state and/or Federal governments. The local share of this program would be obtained by appropriation, use of reserve construction funds, or borrowing. The amount available through this program could be supplemented by additional local appropriations or borrowing.

Operating Procedures. The following steps would be involved in the operation of this program.

1. The base amount of the grant would be determined by dividing

the Recognized Depreciation Amount for school facilities constructed during the base year by the rated capacity of the facilities.

2. The cost of construction would include classrooms, special areas, site, equipment, fees, interest on debt, and all associated costs.

3. Program funds not immediately needed for school construction, rentals, or debt service would be placed in escrow and earmarked for future construction.

Additional operating procedures similar to those in Program No. 1 would be appropriate.

Positive Features. The following features are illustrative of the strengths and flexibility in this program.

1. All local school districts in the state would participate in this program.

2. School facility financing would be a shared local, state, and Federal responsibility.

3. Local discretionary authority would be enhanced.

4. Equalization of local tax burdens would be fostered by the requirement of a uniform local fiscal effort.

5. The proposed program would permit the local school district to hold the program funds in reserve for future construction needs.

6. Local leeway possibilities would not be exhausted as a condition for participation.

7. The amount of state and/or Federal funds required each year would be relatively easy to predict.

8. The required local effort could be adjusted to accommodate different levels of state and/or Federal appropriations.

9. Continued legislative support for this program would enhance the marketability of local district general obligation or revenue bonds for

school facility construction since some state support for debt service is assured.

Negative Features. The following features are illustrative of the weaknesses of this program.

1. Enactment and funding of this program would require a high level of state and/or Federal budgetary allocations.

2. Inadequate appropriations could reduce the effectiveness of the program.

3. Once the program has been enacted, local pressures for continuation would be great because the grants would be included as anticipated income in the fiscal plans to retire debt resulting from construction.

4. Local school districts might be unable to secure sufficient current or borrowed funds to meet immediate construction needs.

5. The measure of school construction need used in this program is not responsive to local conditions.

Possible Adaptations. Various procedures such as the following could be used to modify, restrict, or expand this program.

1. Instructional or pupil units could be weighted in various ways to refine the measure of need.

2. The need measures could be weighted to reflect intrastate variations in construction costs.

3. The program could be adapted for use by regional groupings of local districts.

4. The program could readily become an integral part of the state program for apportioning funds for current operation purposes.

5. The program could be changed to a flat grant for all districts by eliminating the uniform local effort provision.

6. Additional allowances for districts with rapid enrollment growth easily could be added to the program.

7. The funds to which a local district is entitled could be retained at the state level until they were needed for a particular project; at the time of need the accumulated balance could be disbursed. In addition to the balance, advances of future funds could also be distributed if the cost of the project exceeded the balance being retained by the state.

8. If grant proceeds were not needed for debt service or for current facility expenditure requirements, they could be utilized for current operating expenses.

Program No. 8

Equalized Grants for Recognized Debt Service Programs

State and/or Federal financial participation is provided to support recognized local school district debt service with the grant varying inversely with local taxpaying ability.

Needs Measure. The recognized portion of debt service for future construction would be formula-determined on the basis of items related to the number of pupils and/or programs to be housed. The Recognized Project Cost would not exceed the total cost of the project including site, construction contracts, site development, equipment, and related items, with the amount being computed on the basis of a uniformly applicable objective formula. Recognized Debt Service would thus be based on Recognized Project Cost.

Allocation Method. The grant for Recognized Debt Service would be determined by a uniformly applicable state formula and would vary inversely with local taxpaying ability.

Use of Proceeds. Funds distributed through this program would be used only for Recognized Debt Service payments.

Sources of Funds. Funding of the Recognized Debt Service program would be a mutual responsibility of the state, the Federal government, and the local school district. The grant for Recognized

Debt Service would be derived from state and/or Federal sources. Local funds would be obtained from current revenues or building reserve funds.

Operating Procedures. The following steps would be involved in the project from application for debt service grants to amortization of the Recognized Debt.

1. The grant for Recognized Debt Service would be computed on the basis of a predetermined formula.

2. Grants for Recognized Debt Service would be computed annually in accordance with a predetermined formula recognizing local taxpaying ability. The grants would be distributed annually to the local school district which would be responsible for making the debt service payments.

Other operating procedures similar to those in Program No. 1 would be appropriate.

Positive Features. The following features are illustrative of the strengths and flexibility of the program.

1. An objective equalizing formula would determine the respective share of the local, state, and Federal governments.

2. "Lighthouse" school facilities would be permitted since school districts could have approved building programs with costs in excess of that part recognized for debt service grants.

3. The variable level of grants for Recognized Debt Service would provide local property tax relief.

4. Equalized debt service grants would provide a stabilizing effect on future local debt service tax rates.

5. Local leeway possibilities would not be exhausted as a condition for participation.

6. Multiple approaches could be used in the computation of the Recognized Debt Service.

7. By modifying the items used in the computation of the Recognized Project Cost, the state educational agency would have the opportunity to encourage construction to house specific educational programs.

8. Participation by the state and/or Federal government in the debt service program and state guarantees of repayment would enhance the marketability of local school district bonds.

Negative Features. The following items are illustrative of the weaknesses of this approach as the only method of state participation in local school district financing of school facilities.

1. Inadequate budgetary appropriations might result in an ineffective level of state and/or Federal participation.

2. Participation would be limited to those school districts with future debt service obligations.

3. Without proper definition of "taxpaying ability" the fiscal leeway of a local school district could be virtually exhausted as a condition for participation.

4. State grants for debt service only could cause school districts to rely exclusively on borrowed funds for financing facilities.

Possible Adaptations. The program could be modified through adaptations such as the following.

1. All of the Approved Project Costs could be eligible for debt service grants.

2. All past or future local school district debt incurred by the issuance of bonds on the public market, as well as lease-rental and lease-purchase payments for school facilities, could be included in the program.

Other Programs

Other programs discussed in the National Capital Outlay Project consider total state and Federal assumption of school construction costs, allocation procedures for capital outlay in metropolitan or other groups of local districts, loan plans, and combination loan and grant plans. Each of these approaches can be utilized in cooperative financing of elementary and secondary school construction by the Federal, state, and local governments. These programs appear in Chapter VII of *Financing Public Elementary and Secondary School Facilities in the United States,* the report of Special Study No. 7 of the National Educational Finance Project.

FOOTNOTES

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3. *School Management,* "The Skyrocketing Cost of School Construction." July, 1969, pp. 38-43.

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5. John L. Cameron, William W. Chase and Aaron M. Fierson, "Subcommittee Report on Elementary and Secondary School Construction." (An unofficial memorandum.) Washington, D.C.: Office of Construction Service, Office of Education, July, 1969.

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CHAPTER 8

The National School Food Service and Nutrition Education Finance Project[1]

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At its inception, the National Educational Finance Project (NEFP) did not include a special study to investigate and analyze the financial structure and needs of school food service programs. Omitting a study of the financing of school food service programs was recognized as likely to lead to a failure to develop these programs properly in the future, which would have undesirable consequences for the total education program.

Considering the importance of school food service and nutrition education programs as a part of the total education program, a project to study the financial structure of school food service programs was proposed to the United States Department of Agriculture. The USDA, as the administrative agency for school feeding programs in the nation, agreed to fund the project known as the National School Food Service and Nutrition Education Finance Project (SFSP). Arrangements were made to include it under the direction of the National Educational Finance Project, although the NEFP had already completed its design and planning phases and the other satellite projects were all under way.

The work of the SFSP staff was complemented by an Advisory Committee, whose members represented the following agencies and organizations: United States Department of Agriculture, United

States Office of Education, American School Food Service Association, Association of School Business Officials, the *ad hoc* study committees which published *Their Daily Bread,* National Congress of Parents and Teachers, and the United States Catholic Conference.

PROJECT DESIGN

The ultimate goal of the SFSP was to accomplish five major objectives:

1. To prepare a national profile of the entire field of school food service.

2. To define the parameters of school food service needs of the nation's children enrolled in public and private schools, pre-school through the twelfth grade.

3. To indicate the nature of outstanding school food service programs which meet the needs of specific groups.

4. To project school food service needs to 1980, based on a comprehensive study of selected outstanding programs.

5. To develop and evaluate alternating models with different combinations and amount of Federal, state, and local funds for financing school food service programs.

The project's first objective, i.e., developing a national profile of the entire field of school food services, was designed to build perspective for the remaining objectives. The profile, based on records and information expected to be readily available at the state level, was to be developed to include the scope and financial structure of the school food service program in each of the 50 states. A sample of ten school districts from each of nine states was drawn in order to collect information relative to variations among districts in providing for school food service programs. The states were geographically distributed over the mainland of the United States and represented the continuum of state school food service programs.

Objective two, defining parameters of school food service needs, entailed developing criteria for identifying the target populations to be served in each category of service. Estimates were made of the number of persons in each target group, projected to 1980. The third objective, describing exemplary or otherwise outstanding school food service programs meeting the needs of specified target groups, focused on the characteristics of each type of service as well as its financial structure.

The fourth objective was projecting school food service needs to 1980, based on outstanding district level school food service programs. An outstanding program was defined as one whose effectiveness of services provided to children and whose efficiency and economy of operation were demonstrated empirically, or one whose operation most closely corresponded with the recommendations of authorities. A sample of ten geographically distributed states having exceptional school food service programs was selected. In the selection, primary attention was given to the extent to which the various states provided programs for target populations and to the adequacy and efficacy of their programs. The sample was selected to include states which provided support for school food service programs through a general state support program, states which provided support through both general and categorical aids, and states which provided such support only through categorical aids. The sample included states having representative differences, such as sparsely populated and densely populated states, states having concentrations of culturally or economically disadvantaged persons or minority groups, and states having high and low per capita income.

To obtain specific data concerning outstanding school food service programs, a sample of from five to fifteen school districts (or systems) was selected in each of the ten states. The number of districts selected in each state depended upon organization, number of districts in the state, and types of services provided. The sample included systems of varying social, economic, and demographic characteristics. On-site visits were made to each system to determine the scope, characteristics, and strengths of the programs and to obatin information concerning the advantages and disadvantages of the current program of financial support for school food services. Approximately 90 school districts were visited, encompassing some 2,200 schools with a total average daily attendance of 1.2 million, and an average daily participation in school lunch programs of 750,000.

In working toward the final objective of developing alternative financial models, estimates were made of total school food service participation by 1980, of total costs of 1980 projections, and of variations in the percentages of estimated costs borne by Federal, state, and local governments and by parents. The anticipated consequences of these variations were analyzed.

Considerations also were given to determining the costs and methods of financing a national nutrition education program designed to reach teachers and children.

The remainder of the present chapter constitutes a preliminary report of the findings and conclusions of the National School Food Service and Nutrition Education Finance Project. The reader is cautioned that the present document is based upon analysis of only a small portion of the data collected and a review of carefully selected contributions to the literature. A complete report of this project, its findings and conclusions will be published in a separate volume.

A BRIEF REVIEW OF SCHOOL FOOD SERVICE

"The education of their children is the first and most obvious duty of every parent." So said John Randolph in 1829 as he opposed the establishment of free public schools. A similar attitude developed toward provision of lunches for school children in that it was the duty of parents to feed their children. In 1853, however, the New York City Children's Aid Society provided the first free lunches to school children in local industrial schools. Limited expansion of this type of program took place in the United States and by 1900 only a few school food service programs were operating.

> It is laughable to remember how we stumbled into the school lunch program. Surely God looks after our poor blundering democracy, and helps us to do the right thing, even though for the wrong reasons. When the farm organizations realized that cattle and pigs could not consume their surplus, they remembered that there are some 24 million youngsters in the schools. What couldn't that many hungry kids do to a surplus, given the chance! And, presto, the idea became unbeatable to Congress.

Thus spoke Mrs. Agnes E. Meyer, in a talk delivered October 22, 1946, at the First National School Food Service Conference called by the USDA. Mrs. Meyer also said:

> . . . it will take time to achieve free lunches in our schools. Since the human animal learns quickest through necessity, it will in all likelihood take the bitter lesson of another depression. After all we were forced to institute free meals in our schools in the last

depression. If we have another, the present program, which reaches only a limited number of our children, will prove its inadequacy and its injustice to those who are now excluded. Then human need will again force us to take the next step in this program, as material necessity forced us to take the first. Of course, if we used our intelligence we would organize a free school lunch program as soon as possible, as a defense against the social and economic maladjustments of depression.

The existence of poverty-induced hunger among the nation's school children and its social and economic effects were first pointed out in 1904 by Robert Hunter in his book *Poverty*. John Spargo in his book, *The Bitter Cry of Children* (1906), estimated that several million children in the United States were undernourished and pointed out how Europe had attacked malnutrition through school feeding programs. To feed hungry children at school, a few charity-motivated, privately-funded school food service programs were initiated in the late 1800's and early 1900's in such cities as New York City, Philadelphia, Boston, Milwaukee, Chicago, and Los Angeles. The most significant Federal aid programs were initiated as follows:

Year	*Program*
1933	Initial Federal aid. Reconstruction Finance Corporation made loans to some Missouri communities for school lunch labor costs.
1934	Federal Emergency Relief Association and National Youth Administrations paid for labor and material costs.
1936	Surplus commodities donated.
1946	National School Lunch Act passed.
1954	Special milk program initiated.
1962	School Lunch Act amended. Changed allocation formula to participation rather than census figure and added Section 11 to provide special assistance for areas of high economic need.
1964	Economic Opportunity Act. Some funds used for feeding Head Start children and economically needy pupils.

1965	Elementary and Secondary Education Act. Permissible to use Title I funds for School Food Service.
1966	Fair Labor Standards Amendment. Applied minimum wage law to school food service personnel.
1966	Child Nutrition Act. Foundation of breakfast program.
1968	Special Food Service Program for children.
1970	Public Law 91-248. Major amendments to the National School Lunch Act and Child Nutrition Act.

In 1942, California amended the state's cultural appropriations bill to provide funds for a school lunch program. In that same year, Utah imposed a tax of 4 percent on wines and liquors, from which the revenue was to be distributed to school districts according to the number of meals served.

Basically, the years 1930 to 1970 can be characterized as a period of too little national awareness of the importance of school food service, of Federal and state under-funding of the program, and of a resultant retarded program growth. In the early depression years emphasis was on employing unskilled needy women. Then the Federal government began distributing commodities and the spotlight was turned on school lunches as an outlet for aid to farmers. In 1946, the National School Lunch Act (NSLA) was passed; the intent of Congress was to make the school lunch program a three-way partnership in Federal aid, state aid, and parent assistance.

By the close of the 1946-47 school year, all states had programs under the NSLA. The Federal contribution when taken for the country as a whole proved to be less than half the funds required to provide the lunches served. Funds provided by states and their subdivisions varied widely from state to state, but nationwide about 10 percent of all school lunch funds came from these sources. Children's payments accounted for about 50 percent of contributions from all sources and more than 70 percent of contributions from state and local sources. In a 1947 address to the American School Food Service Association, Dr. R. L. Johns stated, "It would seem reasonable to recommend that all the states provide for the financing of at least the non-food costs of the school lunch program."

The average rate of reimbursement from Federal funds had declined from 8.7 cents per meal in 1947 to less than 5 cents per meal in

1954 while the cost of serving lunches had increased sharply from 30.4 to 43.2 cents per meal. The average rate of reimbursement declined 43 percent while the cost of living was increasing 20 percent. Finances have remained a major problem. By 1958, the number of lunches had nearly doubled over the 1947 level and the cost of living had increased, but the average Federal contribution (including cash and commodities) had decreased from 13.0 cents in 1947 to 9.3 cents per lunch in 1958.

A USDA School Food Service Finance Study Committee recommended that requirements, criteria, and performance regarding meals served to economically needy children be improved, that reporting and accounting procedures be improved, that cash assistance be increased to implement fully the intent of the NSLA, and that the level of financial provisions be that provided when the Act was passed in 1946, at which time the 9 cents per lunch ceiling rate of reimbursement equaled about 50 percent of the purchased food cost of the program. The rate for 1958 would have been 15 cents per lunch if this intent had been fully carried out.

A nationwide study in 1962[2] concluded that over 9 million children attended "lunchless schools." Approximately 22 percent of the children in schools with no meal preparation facilities were members of economically destitute families. A 1968 survey[3] revealed that 9.3 million or 18 percent of all pupils were enrolled in schools not offering lunch service. Approximately 39 percent of all pupils participated in a plate lunch program. Only 12 percent of pupils participating were classified as economically needy. Congress was concerned about discrimination in school lunch programs and in 1964 had complained that the school lunch program was not administered free of discrimination.

With the Federal government's war on poverty and the civil rights movement placing emphasis on the plight of the poor, Congress in 1965 passed the Elementary and Secondary Education Act (ESEA). An analysis of approximately 500 ESEA Title I projects revealed that more than 100 provided for breakfast or expanded school food service programs. This was the beginning of the proliferation of funding practices and of the use of funds appropriated primarily for adjuncts to instructional purposes including a school lunch component. The nutritional needs of economically needy children were also the basic concern of the Child Nutrition Act passed in 1966. President Johnson in submitting his proposal for this act said, "This year, 18 million children will enjoy lunches prepared in school, yet too many children still fail to get a good lunch; some cannot afford the charge. No child in an affluent America should be without an adequate diet. The new program will move us far towards that goal."

President Nixon stated in late 1969 that by Thanksgiving 1970, all economically needy pupils would be served a school lunch free or at a reduced price. In 1970, Congress, the USDA, schools, and concerned groups accelerated their efforts to close the nutrition gap and especially to feed needy children. Public Law 91-248, which required new regulations, was approved May 14, 1970. Proposed regulations were published in the *Federal Reporter* on July 17, and interested parties were given 20 days in which to comment. Concerned groups, including the Children's Foundation and the Columbia University Center on Social Welfare Policy and Law, urged that public hearings be held because the Federal proposals were "in part, illegal and/or inappropriate" and hearings "could avoid needless litigation." The USDA decided, however, to review and evaluate the 106 comments received, as they wanted to publish the new regulations early in the school year and expressed the belief that this method would consume less time than public hearings. Where practicable, comments received were interwoven into the new regulations by the Department and published in final form on September 4. The USDA then conducted regional meetings to interpret the new regulations.

Even without the use of the hearing process, many people, including Congressman Perkins (September 21 *Congressional Record* H9012) expressed the belief that actions in this matter were unnecessarily slow. Doubt was also expressed that the intent of the President and the Congress would be implemented fully. Several reasons for this pessimism were advanced. Among these were lack of adequate funding and the lateness of appropriations. Also, some have held that Federal regulations regarding Public Law 91-248 do not appear to be so strong or specific as Congress intended, especially regarding services for economically needy pupils. Because of the fund and requirement uncertainties, schools could not begin to implement the new wishes and mandates of the Congress until the school year was well underway.

The National School Lunch Act and other food assistance programs are administered through the United States Department of Agriculture. Within the Department, school feeding programs are the responsibility of the Child Nutrition Division of the Food and Nutrition Service, recently formed and separated from the Consumer and Marketing Service. The relative importance of feeding programs, especially school lunch, may be discerned in part from a statement of USDA expenditures over a three-year period (Table 8-1).

TABLE 8-1

U.S. DEPARTMENT OF AGRICULTURE EXPENDITURES - 1967-69*
(with breakdown for Consumer & Marketing Service)

	1967	*1968*	*1969*
U.S. Department of Agriculture (Total)	*$5,429,086,000*	*$6,794,773,000*	*$7,693,381,000*
Consumer & Marketing Services:			
Consumer protection, marketing, and regulating	82,923,000	93,022,000	112,343,000
Payments to states	1,750,000	1,750,000	1,600,000
Special milk	96,066,000	103,730,000	101,925,000
School lunch	208,298,000	216,860,000	237,007,000
Food stamps	114,095,000	184,727,000	247,766,000
Removal of surplus commodities	145,419,000	174,732,000	414,901,000
Milk market orders assessment	16,000	− 1,010,000	− 769,000
Other	29,647,000	31,400,000	33,182,000
Total - Consumer & Marketing Service	$678,215,000	$805,210,000	$1,147,956,000

*Statistical Appendix to Annual Report of the Secretary of the Treasury on the State of the Finances FY Ended June 30, 1969. Washington: U.S. Government Printing Office, 1970 pp. 20-21

The reader will note from Table 8-1 that Federal cash support in terms of net expenditures from direct appropriations for the school lunch program alone was almost a quarter of a billion dollars in 1969, and represented more than one-fifth of cash expenditures by the Consumer and Marketing Service. This is exclusive of supplemental expenditures from Section 32 funds (removal of surplus commodities). In addition to cash reimbursements, the Department of Agriculture offers assistance to school feeding programs in the form of commodities which are donated to qualifying schools.

A summary of Federal expenditures for food assistance programs for FY 1969-71 (Table 8-2) allows a more detailed analysis of the financial importance of child nutrition programs. The food assistance programs are divided into categories of child nutrition, special milk, food stamp, direct distribution to families, direct distribution to institutions, and nutrition education. The table figures are on an obligation basis reflecting paid and unpaid liabilities for FY 1969 and include supplemental cash and commodity assistance in addition to the direct appropriation for these programs. Only the first two categories are

TABLE 8-2

UNITED STATES DEPARTMENT OF AGRICULTURE

FOOD ASSISTANCE PROGRAMS, FISCAL YEARS 1969-71
Obligations (Paid and Unpaid)
(Thousands of Dollars)

Program	*1969 Actual*	*1970 Estimated*	*1971 Budget Estimated*	*1971 Budget Compared with 1970*
A. CHILD NUTRITION PROGRAMS				
1. Cash Grants to States:				
(a) School Lunch (Section 4*):				
Direct Appropriation	$162,034	$168,041	$169,721	+$1,680
(b) Free and Reduced Price Lunches:				
Child Nutrition Program	10,000	44,800	48,347	+ 3,547
Special Feeding Program (Section 32*)	32,039	61,000	151,653	+90,653
Subtotal	42,039	105,800	200,000	+94,200
(c) School Breakfast:				
Child Nutrition Programs	3,500	10,000	12,000	+2,000
Special Feeding Program (Section 32)	2,057	1,000	3,000	+2,000
Subtotal	5,557	11,000	15,000	+4,000
(d) Nonfood Assistance:				
Child Nutrition Programs	748	10,000	12,500	+2,500
Special Feeding Program (Section 32)	9,513	5,000	—	−5,000
Subtotal	10,261	15,000	12,500	−2,500

TABLE 8-2 *(Continued)*

UNITED STATES DEPARTMENT OF AGRICULTURE

FOOD ASSISTANCE PROGRAMS, FISCAL YEARS 1969-71
Obligations (Paid and Unpaid)
(Thousands of Dollars)

Program	*1969 Actual*	*1970 Estimated*	*1971 Budget Estimated*	*1971 Budget Compared with 1970*
(e) State Administrative Expenses:				
Child Nutrition Programs	153	750	750	—
Special Feeding Programs (Section 32)	391	2,000	2,000	—
Subtotal	544	2,750	2,750	—
(f) Nonschool Food Programs	3,244	13,572	15,000	+1,428
Total, Cash Grants to States	$223,679	$316,163	$414,971	+$98,808
2. Commodities to States:				
Total, Commodities	292,107	230,205	264,465	+34,260
3. Federal Operating Expenses:				
Total, Operating Expenses	3,995	5,282	5,542	+260
TOTAL, Child Nutrition Programs	519,781	551,650	684,978	+133,328
B. SPECIAL MILK PROGRAM:				
TOTAL Special Milk	102,677	104,000		−104,000

*Section 4 is defined as "General cash-for-food assistance" and may be utilized *only* for food. Section 32 is defined as "special cash assistance" and may be utilized for lunch, breakfast, or non-food assistance costs.

considered in Table 8-2, as the remaining categories do not pertain to child feeding programs. The total Federal food assistance program in FY 1969 represented 0.13 percent of a GNP of $950 billion and 0.66 percent of the total Federal expenditures of $183 billion.[4]

Total expenditures for public elementary and secondary schools in 1968-69 were estimated to be $35.8 billion while those for private schools were estimated at $4.3 billion, for a grand total of $40.1 billion in public and private elementary and secondary school programs.[5] During fiscal 1969, approximately 53 percent of school district revenue receipts were from local sources, 41 percent from state sources, and only 6 percent from Federal sources. By contrast, the United States Department of Agriculture estimated school lunch program expenditures to be $2.1 billion or 5.2 percent of all expenditures for public and private education. The sources, amounts, and relative percentages of contributions were approximately as follows for school feeding programs in 1968-69:[6]

Federal Government	$ 564.3 million	(26.6%)
State & Local Government (Direct contributions)	180.0 million	(8.5%)
Other Local Contributions) (Adult payments, etc.)	320.0 million	(15.1%)
Children's Payments	1,049.0 million	(49.6%)
TOTAL	$2,113.0 million	

Thus, school food service is in reality supported primarily through a financial partnership between the Federal government and school children (families). This is an unusual arrangement regarding education, since legally and historically the 50 states bear primary responsibility for establishing and supporting a system of free public education for their citizens, although the states have delegated much of the responsibility for operation of schools to local school districts and boards of education.

There is general agreement among students of educational finance that all of the educational services furnished in the public schools should be financed from public funds. In addition, Federal courts have ruled that public funds can be used to finance secular functions and objects such as transportation and textbooks in private schools within the framework of the "child benefit" theory. The school food service program is a part of the educational program in that one of the purposes of education is to teach desirable health practices, including proper dietary habits. In spite of this generally accepted purpose, children's fees (lunch payments) finance approximately 50 percent of the program costs. The important result is that less than 40 percent of the elementary and secondary pupils in the United States receive a regular school lunch.

The United States is the first nation in history with the ability to eliminate malnutrition economically. Whether this will be done is closely related to political willingness to take the necessary steps and to the degree and speed with which the necessary funds are appropriated.

LEGAL FOUNDATIONS

The National School Lunch Act (1946) was for 20 years the fundamental Federal statute regarding child nutrition programs. The Child Nutrition Act (1966) expanded existing programs and added new features, but without major revisions in operational procedures. With the passage of Public Law 91-248, which amends both the National School Lunch Act and the Child Nutrition Act, Congress has mandated some extremely important changes in school nutrition programs. Advance appropriations and carryover of funds were authorized, enabling state and local planning for and budgeting of funds needed to supplement Federal funds. States will be required to utilize tax funds to meet a portion of the matching requirements of the Act. Availability of free and reduced price meals has been greatly expanded. A reduced price meal is defined as one sold to an economically needy child at a price not to exceed 20 cents, with self-certification the only basis for determining a child's eligibility to receive a free or reduced price meal. Congress is committed to provide "such sums as may be necessary to provide special assistance to assure access to the school lunch program under this Act by children of low income families." States are required to develop and annually update plans for implementing school nutrition programs, including how all economically needy pupils will be fed and how the program will be extended to "every school within the state." Competitive sales must be eliminated. A national advisory council was created, whose responsibilities include a continuing program study and an annual report to the President and Congress relating the study results and recommendations.

The 91st Congress considered two bills (S. 4104 and H.R. 18882 which could have required nearly all school lunch programs to serve breakfast, would have increased breakfast funds to $200 million in FY1972, and would have provided such sums as are needed thereafter. The bills also would have provided additional funds for nutrition education.

Whether school feeding is instruction, an auxiliary service, or an agricultural program is still a controversial question. Some consider it a supporting service and place it in the business office or contract for the service. Others classify it as instruction and include it in curriculum. In 1949 the Commission of Organization of the Executive Branch of the Government recommended that it be transferred to HEW. The White House Conference on Food, Nutrition, and Health recommended that because of a USDA conflict of interest, HEW should administer it.

A third view held by many is that which agency administers the program doesn't matter so long as schools teach good food habits and provide all children with all the food they need at school and operate the program efficiently and economically.

A review of the state statutes and state board regulations pertaining to school nutrition programs for the SFSP revealed that most states have inadequate laws. Evaluative criteria included: (1) program goal statements; (2) administrative organization provisions; (3) program standards; and (4) funding provisions. Existing statutes generally were in some respect out-of-date; some were in conflict with Federal laws, sound government practices, and current national goals, and thereby serve to handicap further program development. Apparently, few state legislatures have revised their statutory reference to the school nutrition program since initial laws were passed in the 1940's.

Of the ten outstanding states surveyed by the SFSP, Massachusetts and Louisiana have made the most adequate funding provisions. Georgia has made the greatest effort to remove legal handicaps. South Carolina has mandated and provided funds to enable all counties to have a supervisor. Massachusetts appears to have the most comprehensive and adequate laws. Her basic law was enacted in 1943, and statutes relating to school food service have been updated in 1949, 1950, 1951, 1953, 1954 and 1965. Major revisions were enacted in 1970.

Some examples of current state laws relating to school nutrition programs that need study and probable updating include state statutes as follows:

1. "The board may delegate to the manager the authority to employ

the labor." This practice seems unsound and appears analogous to delegating to the principal the authority to employ teachers.

2. "The board of education, while operating in a high school lunch room, is not liable for injuries sustained by employees therein." The Universal Standard Workmen's Compensation and Employer's Liability policy is used in 47 of the 50 states. This state probably abides by Standard Workmen's Compensation requirements as regards all other school personnel and school food service employees should not be excluded.

3. "Lunches shall not be sold for a less price than the cost of food . . . In cities which have 500,000 inhabitants or more any surplus fund derived from the sale of lunches may, with the discretion of the board of education of the city, be used to furnish lunches at less than cost to the public school pupils of compulsory school age who would otherwise be unable, by reason of insufficient nutrition, to attend school and pursue the course of study prescribed." The National School Lunch Act requires that free or reduced price meals be served to economically needy pupils. The above statute appears to be in conflict with requirements of the National School Lunch Act; in any event, provision of meals at less than full price should not be contingent solely upon a profit-making sale price to other pupils.

Funds provided for state administration of the school nutrition program are frequently included in the general office budget or in a block grant of state school monies. In the same states, by contrast, funds for activities such as Manpower Development Training Act often are earmarked state administrative funds.

In 1969, Massachusetts established a special commission on hunger and malnutrition. Following a comprehensive study of the state's school nutrition needs, the commission recommended legislation to mandate needed changes and provisions. The measures passed by the 1970 legislature are summarized below:

1. Require (a) all one-session schools to serve lunches by September, 1972;
   (b) all others to serve lunches by September, 1973;
   (c) all schools with a high number of needy children to serve breakfasts by September, 1972.

2. Provide partial reimbursement from state funds for school food service facility construction or alterations for central kitchens.

3. Provide free meals for children from public assistance or comparable income families.

4. Provide state funds to cover labor costs of breakfasts and lunches.

5. Provide aides to supervise students during lunch hours.

6. Authorize State Department of Education or district to establish food service production centers and to secure meals through contract purchase.

7. Provide six additional nutritionists (one for each district) in the state school nutrition office to insure long-range program effectiveness.

8. Provide nutrition education for all students and parents plus college courses for all students and advanced courses for education, medical, dental, and public health students.

9. Require use of same medium of exchange for paying and nonpaying children.

10. Implement a universal free lunch goal as follows: "The selling price of lunch to children shall be reduced by 5 cents annually until lunches are available completely free to children." Recommended funding ratio: state 30 percent, local 10 percent, and Federal 60 percent of costs.

11. Make permanent and expand state pilot program funds whereby senior citizens are provided below-cost, nutritionally adequate meals served at school after the regulation lunch period or delivered to homes and housing developments.

Needed statutory changes cannot be made expeditiously without further analysis, studies, public awareness, experimentation, and pilot projects; nevertheless, these needs should not be used as an excuse for delays or inaction. The SFSP staff recommends that each state legislature consider legislation similar to the Massachusetts act and to P.L. 91-248 but modified to meet its own particular needs.

According to information received from the Columbia University Center on Social Welfare Policy and Law in August, 1970, litigation relative to responsibilities of state and local school officials, to school food service programs, and to program inadequacies is pending or has already been filed in Michigan, Kansas, Colorado, Ohio, New York, Wisconsin, Illinois, and California. The intent of some of the suits, including the California, Colorado, and Massachusetts cases, is to induce the courts to proclaim the school lunch as the right of every child and the program as a school responsibility in recognition of the "in loco parentis" relationship between schools and children; failure of school districts to provide food service to all economically needy children in all schools would result in denial of any Federal or state food service funds to such districts.

SCHOOL NUTRITION PROGRAM DEVELOPMENT

The progress of school nutrition programs to date and their present status have been utilized as the primary basis for projecting the programs to 1980. Selected facts and projections relative to each program are presented below.

Lunch

The National School Lunch Program, begun in 1946, was operated in schools enrolling 73 percent of all pupils in March, 1968. Of this number, 52 percent of the pupils participated, which represented 37 percent of the total U.S. enrollment.[7] As cited previously, Congress intends that states make the NSLP available to all pupils in all schools; thus, taking into account previous growth rate in participation, by 1980 approximately 50 percent of the total enrollment might be expected to participate. If however, a universally free or nearly free lunch program becomes a reality, together with needed improvements in such participation—influencing factors as facilities, schedules, food appeal, and atmosphere—indications are that 90 percent of all students will participate. This projection is made on the basis that many schools now serve in excess of 95 percent of the pupils in ADA.

In February of 1969 the USDA issued a report[8] showing the percent of total lunches which were served free or at a reduced price for the Fiscal Years 1963 through 1968. For those years, the national totals were, respectively, 9.6 percent, 9.9 percent, 9.9 percent, 10.9 percent, 12.2 percent, and 13.0 percent. The FY 1969 figure was 15.1 percent. A comparison of the Fiscal Years 1963 and 1968 showed an average nationwide increase of 96.9 percent in the number of free and reduced price lunches served. Eight states increased more than 200 percent and eight states increased from 100 to 200 percent. The changes ranged from a 20.2 percent decrease to a 329.4 percent increase.

A 1968 USDA survey[9] revealed that in the nation's 1,000 poorest counties, 1,648 schools had no food service available. Their enrollment was 86,915.

Until the implementation of P.L. 91-248, a valid comparison of performance versus needs in serving low income children was almost impossible. USDA statistics[10] showed that in FY 1968, 13 percent of all lunches were served to economically needy students. This figure increased to 15.1 percent in FY 1969, and was projected to 20.5 percent in FY 1970 and 25.5 percent in FY 1971. Thus, substantial progress appears to have been made in fulfilling unmet needs.

Breakfast

The school breakfast program was undertaken in 1966 and by the end of FY 1969 was available in 3,325 schools. The breakfast program has not been in operation sufficiently long to establish trends. Seventy-one percent of the almost 40 million breakfasts served in 1968-69 were free to the recipients, or about 3½ times the average percentage of lunches served free.

Therefore, most breakfast programs are in "severe need" and should be reimbursed at "up to 80 percent of the operating costs" as authorized in Section (d) of the Child Nutrition Act. If Federal funds and requirements do not permit this, program growth will be retarded because districts cannot, and paying pupils or the school lunch program should not, underwrite breakfast labor costs.

Special Milk

The special milk program was initiated as a temporary program in 1954, chiefly as a means of reducing the surplus of milk in leading dairy states. It was also regarded as a temporary method of supplying limited nutrition to children in economically needy areas, especially where food service was unavailable in schools. Consumption of milk often appears to be correlated inversely with student participation in the lunch program.

Although recent legislation made the Special Milk Program permanent, further attempts may be made to incorporate it into the total child feeding effort. This would emphasize the provision of complete meals including milk rather than milk alone. Thus, no 1980 projections of this program were offered in the present chapter, as its future appeared somewhat cloudy.

Other Programs

Schools are increasingly used as feeding centers for programs authorized by P.L. 90-302, Head Start and other pre-school programs, Model Cities programs, community outreach groups (e.g., senior citizens), and disaster-stricken communities. Such programs are too new and sparse to make meaningful projections; however, the next ten years will certainly see a proliferation and burgeoning of programs which are not restricted to students in grades 1 through 12.

Private Schools

Private schools face unique problems in terms of school food service, beginning with state-level administration. Private school lunch programs in 26 states are administered through a regional office of the USDA; programs in 24 states are administered through a state agency as are public school programs.

Private schools account for 15.2 percent of all schools in the nation and 11.5 percent of the total enrollment. The NSLP is operated in 29.5 percent of all private schools, representing 32.7 percent of all private school enrollees. Other lunch services are offered in 10.7 percent of the schools, including 14.8 percent of students. No lunch service is available in 59.8 percent of private schools, enrolling 52.5 percent of all private school students.[11] Perhaps a major reason for the lack of provision for food service in private schools is that many private schools are not part of a larger system, but are essentially entities unto themselves. Such decentralization makes program initiation and expansion difficult and expensive. As private schools experience increasing financial difficulties, items such as feeding programs may be curtailed or eliminated.

Urban Problems

Cities with a population of 150,000 or more have large numbers of schools without food service, due primarily to a lack of facilities. Many urban schools, especially at the elementary level, are "neighborhood schools" designed to serve small areas, and pupils could go home for lunch.

In 1968-69, 36 of 57 large cities reported that 1,883 schools attended by 1,083,263 pupils had no food service available. In those cities 667 schools and 325,592 pupils were in low income areas.[12] The ADP in low income schools was 38 percent compared with 36.7 percent in other metropolitan schools.

Several developments indicate that one can reasonably expect food services to be expanded into schools presently without service: (1) The concept of centralized meal preparation and satellite feeding (often in classrooms) will allow food service in schools without facilities. (2) Modification of USDA regulations to permit reimbursement for meals prepared and served to students by food service management companies will allow school boards to purchase such service immediately, without waiting to pass bond issues and construct new facilities. (3) The mandate of Congress (in P.L. 91-248) to extend food service programs into every school will, if enforced, assure the availability of meals to every school pupil in the nation. (4) Non-food assistance funds are being concentrated in these cities. (5) Organizations working to aid poverty families are pressing for expanded school feeding programs.

USDA-Donated Commodities

The distribution of surplus agricultural commodities to school lunch programs was first authorized in 1935. The National School Lunch Act expanded the concept to provide section 6 foods "to be distributed . . . in accordance with the needs . . . " Commodities are among the controversial aspects of the program, due primarily to sporadic and unpredictable quantities distributed and delivery dates. Transportation and storage problems are common among recipient school districts. Variations in the amounts of commodities distributed can be seen from the list below, which shows for each fiscal year the average dollar value per child of commodities donated for use in school lunch programs.[13]

Fiscal Year	*Per-Child Value of Commodities*	*Fiscal Year*	*Per-Child Value of Commodities*
1955	$ 8.05	1962	$11.54
1956	10.61	1963	10.73
1957	11.87	1964	10.87
1958	6.86	1965	13.93
1959	8.23	1966	8.68
1960	9.63	1967	9.10
1961	9.12	1968	13.40

School food service directors in the outstanding school districts studied were asked a question related to commodities. Forty percent indicated that they favored the present system of cash reimbursement plus donated commodities; 52 percent favored cash reimbursement only (increased by an amount equivalent to the value of commodities presently donated); and 8 percent gave no response.

Nutrition Education

Representatives from school districts selected in the outstanding and continuum samples were asked a series of 20 questions pertaining to nutrition education. The items were general in nature, requesting such information as whether or not printed curriculum guides were used on a district wide basis in teaching nutrition, the grade levels at which nutrition was an integral part of the overall curriculum, the typical number of teaching hours per student per year devoted to nutrition education, and the estimated costs of an optimum program of nutrition education.

The data revealed no discernible pattern of nutrition education within states or by district size. A possible exception to this was the use of printed curriculum guides by districts with a student enrollment of 50,000 or more. All responding districts indicated the presence of nutrition in the curriculum at every grade level, generally incorporated into other subject areas rather than presented as a separate subject. The subject areas most often cited as dealing with nutrition were science, health, and home economics.

The range of teaching hours per year typically devoted to nutrition education was from 2 to 108; the mode was ten hours per year. The suggested cost of a nutrition education program ranged from 0 to $40,000 per year. Replies to this item were so sparse as to preclude even the most rudimentary analysis.

In summary, the information collected did not give evidence of a well organized, sequentially planned program of nutrition education in the majority of the school districts polled. The attitudes of district administrators and classroom teachers emerged as the most viable factors affecting the quality and extent of nutrition education. A concluding, but guarded, opinion was that nutrition education in the nation's schools exists more in word than in fact.

PERSONNEL

Early Practices

Under the Work Projects Administration (WPA) during the depression years, many school feeding programs were initiated to provide jobs for unemployed, unskilled, economically needy women. The WPA established staffing formulas at the state, system, and operational unit levels; developed personnel guides and manuals as well as training programs; defined supervisory functions; devised schedules for supervisors' visits to individual units; and set pay rates for all employes. With the demise of the WPA, Federal emphasis shifted to cash reimbursements for lunches and to surplus commodity removal, and away from personnel aspects of the program. Lacking requirements or prohibitions regarding the source of funds to meet payroll costs, pupil payments constituted the majority of revenue for this purpose. This detrimental practice still prevails. In more than half of the outstanding school districts studied, administrative personnel and individual unit managers were paid from operating funds; other personnel were paid from operating funds in almost every district. By the 1943 termination of the WPA, community attitudes had developed in many areas to the effect that school food service was a place where unskilled individuals in need of a job — often a relative of some prominent citizen or politician — could find work. Thus, it was not unusual for a department to be either overstaffed or under-staffed, depending on the number of such persons seeking neighborhood jobs. Exceptions were found in metropolitan school systems where central kitchens were operated and employees were likely to be part-time assembly line workers.

Organization of School Lunch Programs

In 1946, The National School Lunch Act was passed. In order to participate in the program, it was necessary that a state establish an office within the organizational framework of its department of education to administer the National School Lunch Program. The Act provided no funds for administrative purposes and no mandates regarding state level staffing formulas, personnel qualifications, or functions. Problems of organizing and financing the school lunch program within each state became the responsibility of the department of education, with no assurance of any standardization or uniformity throughout the nation. As a result, eight different organizational patterns emerged throughout the 48 states. Seventeen states administered the school lunch program through a separate division under the chief state school officer; 11 states administered the program through a subdivision under the division of school administration; four states placed school lunch in a subdivision under the division of administrative services; and one state each administered school lunch through a subdivision under the division of health, a subdivision under the division of physical education, or a separate division under the state board of education. A 1967 survey conducted by the American School Food Service Association showed that in 12 of the 37 responding states, school food service was included as a division in the department of education and in 25 states school food service operated through a section under some other division.

State Level Administration

The United States Office of Education reported that in 1950,[14] 316 full time professional personnel were employed in 47 states to administer food service programs. Each individual supervised an average of 171 schools. In 1968, participants in a USDA-sponsored workshop recommended that no state-level supervisor should be responsible for not more than 180 school lunch programs. Forty-six states responding to a 1968 survey by the American School Food Service Association reported a total of 324 professional school food service personnel; each person at that time was supervising an average of 234 programs. Other figures cited in the two reports showed a 40 percent increase in the number of school lunch programs operating, with a corresponding increase of only 20 percent in the number of state-level supervisors for such programs — a net increase of 59 percent in the average load per supervisor. Approximately 57 additional supervisors would have been required to reduce each individual's load to the recommended 180. In June of 1968, the ASFSA conducted a survey at the request of Congressman Carl Perkins (chairman of the Committee on Education and Labor of the House of Representatives). The survey revealed that all states except four needed additional supervisory staff, totalling between 90 to 100 supervisors in 46 states. Thus, it is quite clear that states desperately need staffing guidelines and additional funds for program administration.

Because of requirements regarding state and system level staffing for other Federal aid programs and the lack of both Federal funds and guides for school food service, the program has been in a very poor position to compete for adequate, qualified personnel. It must compete with other Federal programs at the state level, with school districts, and with private industry, which can adjust salary offers to attract high-quality talent. On the other hand, state departments of education generally must comply with rigid personnel regulations, staffing formulas, and salary schedules. Dr. Edgar Fuller, then the Executive Secretary of the Council of Chief State School Officers, in 1960 urged the appropriation of Federal funds for the administration of school food service programs when he appeared before the House Committee on Education and Labor regarding a proposed school lunch bill.

System-Level Personnel

Several district-level staffing formulas have been devised in recent years. For example, the 1967 Southern States Work Conference bulletin entitled "School Food Service Policies and Standards," recommended a "competent, local-level supervisor for combinations of programs of from four to ten units for participation of from 1,500 to 2,000 children."

Findings of the present project indicated that in school systems having at least one school food service supervisor (and quite a few systems had none), the average load was over 18 schools per supervisor, representing almost 8,900 students per supervisor.

Decisions regarding various aspects of school nutrition programs are made by many different types of personnel. Wide variations in the decision-making process were found in the outstanding school districts visited. A detailed account of such differences will be related in the SFSP final report.

Sources of Funds Used to Meet Payroll Costs

The National School Food Service Series and Nutrition Education Finance Project secured information relative to the various sources of funds utilized in paying school food service employees. For present purposes, the school food service program was investigated at two levels —the school district level and the individual unit (school) level. Tables 8-3 and 8-4 present the percentage of districts utilizing each of several sources of funds to meet payroll obligations at each level. Single sources and multiple sources have been itemized separately and various program payroll components are listed across the tables. The reader will note that approximately one half of all system-level costs were financed from child payments.

TABLE 8-3

SOURCES OF REVENUE UTILIZED FOR SYSTEM-LEVEL COSTS*

		Nature of Cost					
	Source	*Administration and Supervision*	*Auditing*	*Secretarial and Clerical*	*Equipment Repair and Maintenance*	*Transportation*	*Warehousing*
Single Source	Child Payments	41%	30%	50%	49%	53%	49%
	Local	42	53	30	28	30	35
	State	0	5	0	0	0	0
	Federal	0	0	0	0	0	0
Multiple Sources	Child Payments & Local	8	2	12	13	8	3
	Child Payments, State & Federal	3	2	4	4	4	5
	Child Payments & Federal	3	5	2	4	4	5
	State & Local	2	2	2	2	2	3

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*Figures cited represent the percentage of respondents indicating each source. Due to rounding, columns may not add to 100%.

TABLE 8-4

SOURCES OF REVENUE
UTILIZED FOR INDIVIDUAL UNIT COSTS *

		Nature of Cost				
	Source	*Managers*	*Cashiers*	*Cleaning and Custodial*	*Dining Room Supervision*	*Production Services*
Single Source	Child Payments	73%	67%	31%	31%	81%
	Local	7	8	50	52	0
	State	2	2	0	2	2
	Federal	0	0	0	0	0
Multiple Sources	Child Payments & Local	7	12	8	2	4
	Child Payments, State & Federal	4	4	4	4	4
	Child Payments & Federal	5	6	13	4	4
	State & Local	2	0	4	4	4
	Other	0	0	0	0	2

*Figures cited represent the percentage of respondents indicating each source. Due to rounding, columns may not add to 100%.

In summary, the tables illustrate that children's payments constituted the majority of revenue used to pay school food service personnel. This practice is common at both the school district and individual unit level and is incompatible with methods of funding other school payroll costs. Other data collected during the project revealed that more than 60 percent of total school food service program income was derived from children's payments.

Food Production

Kitchen labor, one of the chief costs of operating a school food service program, plays a large part in determining the total per-meal cost. In 1968-69 among the outstanding school districts studied, the average labor cost per meal ranged from 7.4 cents to 43.1 cents, with a mean of 14.9 cents. Labor costs as a percent of total per-meal costs ranged from 16.2 percent to 54.2 percent, with a mean of 39.9 percent. The production rate ranged from 7 to 53 meals per labor hour, with a mean of 16. The maximum was observed in a central kitchen operation.

Labor costs are rapidly increasing with Federal minimum wage law applications to school food service employees, and this trend is expected to continue. The mean hourly wage paid to nonsupervisory school food service employees in March, 1969, was $1.68.[15] Of particular interest is the fact that this figure represented an increase of five cents in the mean since October of 1968. This figure is obviously higher at present, as the minimum wage now in effect is $1.60 per hour. A comparison of wages showed the following average hourly earnings for certain categories of school employes: School food service, $1.62; custodial, $2.28; office, $2.37; skilled maintenance, $3.44; bus drivers, $2.62; and all employees, $2.24. Average wages were found to be 16 percent higher in metropolitan areas than in smaller communities.

In the same survey, paid holidays were least numerous for school food service employees among the groups studied. Paid vacations were granted to 87 percent of the custodial, office clerical, and skilled maintenance workers, but to only 33 percent of the food service workers. Health insurance and retirement plans were less available to food service employees than to any other category of employees.

In the outstanding school districts surveyed, lack of qualified personnel was one of the most frequently cited handicaps to expansion and improvement of school feeding programs. Obsolescence of technical knowledge and skills prevails to a considerable degree among school food service personnel nationwide. In many cases, personnel have been employed without any preservice training and with little or no orientation to the program. In-service training has been sparse and incumbents often have not been required to keep up-to-date. Other flaws in the personnel aspects of the school nutrition program include the lack of staffing formulas, job descriptions, inadequate pay rates, and poor recruitment procedures. Such deficiencies tend to make the program unjustifiably expensive and unduly ineffective and inefficient.

The SFSP called upon an expert in the field of labor economics to forecast labor costs for school feeding programs in 1980. Among his projections were the following: (1) If present trends continue, as seems rather likely, an average annual increase of 4 percent in the minimum wage would result in a figure of $2.46 per hour as the 1980 minimum wage. (2) If rapid inflation continues, larger increases in the minimum wage might be observed — perhaps an average of 5 percent annually — giving a legal minimum of $2.73 per hour in 1980. (3) If a slowdown in the economy occurs, the average annual increase might decline to 3 percent, resulting in a minimum legal hourly wage of $2.21.

On the whole, labor costs are visualized by the SFSP as likely to rise approximately 50 percent during the 1970's. Recessive tendencies in the nation's economy might reduce this figure to roughly 40 percent, but prolonged inflation could bring about a net rise of 75 percent or more. In any event, educators charged with financial responsibility must seek additional revenue and improve the personnel aspects of school nutrition programs.

In nearly all instances, the practice of staffing departments largely through the use of volunteers and/or pupils has outlived its usefulness. When many departments served only a few children a very limited menu, requiring simple equipment, such a plan was feasible. It is essential that today's programs have maximum labor productivity through the use of carefully selected and well-trained personnel. For example, rarely would a volunteer have the knowledge to "do food purchasing" for today's large departments from the institutional food supplier. In addition, district level centralized bid buying is essential if the necessary price and quality standards are to be met. The services pupils can render without being exploited or subjected to hazards are very limited, as is the number of students that can be used without overcrowding work areas. Furthermore, regulations provide that economically needy pupils shall not be required to work in order to earn a free or reduced price lunch.

FACILITIES

School food service facilities in the past were typically self-contained, that is, part of an individual school unit, and were designed to prepare and serve meals to one school's student population only. Food service facilities often existed only in those schools with a high percentage of transported students, or in schools where students were unable to return home for lunch or purchase a mid-day meal elsewhere.

The construction of school food service facilities has been encumbered by the continuing problem of inadequate funding. Many local school boards have been, and still are, reluctant to earmark funds for constructing and equipping school kitchens and dining areas. Federal support for non-food items has been confined to the initial year of the National School Lunch Program (1947-48) and recent appropriations of non-food assistance funds (renewed in 1967) under a provision of the Child Nutrition Act of 1966. Even now, much of the cost of equipment is borne by the child because of inadequate tax support.

Soaring building costs have not eased the funding dilemma. A recent report[16] indicated that 44.4 percent of the new elementary schools and 61.7 percent of the new secondary schools completed in 1969 included cafeterias. Kitchens were provided in 60.4 percent of the new elementary schools and 68.2 percent of the new secondary schools completed in 1969. The figures represent a slight decrease in the number of cafeterias built and a slight increase in the number of kitchens over past years' construction. A similar pattern prevails for elementary and secondary school additions completed in 1969. The report pointed out that the differences shown are so slight that one may conclude only a leveling off rather than a decline in the construction of food service facilities. The interesting point is that the stabilization is occurring at a time when school feeding programs are receiving increased popular support and interest.

The growing interest in school feeding has created additional food service facility problems. Many older school buildings, especially in large urban areas, were built without kitchens or cafeterias. Today, there is either insufficient land area around these buildings or they are not of a construction or condition suited for the addition of food service facilities.

School food service operations are faced with the problem of expanding service with inadequate facilities at a time when construction costs are reaching a prohibitive level. There are indications of a trend toward central kitchens and satellite feeding as a means of overcoming facility difficulties. For example, the School Food Service Finance Project found that among the sample districts, 68 percent of the new food service facility construction for the past three years consisted of components for central kitchen-satellite operations. The USDA reports that the number of central kitchens serving five or more schools increased from 292 in FY 1967 to 391 in FY 1970.

The Public Facilities Commission of the City of Boston retained an engineering firm to conduct a study to determine the most economically feasible method of operating their school food service program in the future. After extensive study, the firm recommended

> . . . that a central kitchen sending refrigerated (but not frozen) prepared food to the schools is the only practical system for providing a lunch program in all present and future schools including those without dining rooms . . .[17]

The recommended system also had the lowest capital and operating cost per lunch of all systems investigated, including those limited to feeding in dining room schools only.

The need for facilities is so great that unless non-food assistance funds are immediately increased several hundred-fold, other avenues of procurement must be utilized rather extensively. These might include Model Cities programs, "community corporations," and equipment lease-purchase agreements. The 1969 White House Conference on Food, Nutrition, and Health recommended a substantial increase in funds for equipping large-scale meal delivery systems. For example, $286 million per year for four years would provide a system capable of serving every child in the nation; in addition, such a system could provide two meals daily for 28 million children.

Centralized food preparation will not be the facilities answer for every school system. The SFSP survey found recent central kitchen-satellite construction confined essentially to systems with student enrollments of 6,000 or more. Many school systems have a few schools spread out over a large land area, a situation which limits the feasibility of a central kitchen operation.

Contracting with food management firms to operate the school feeding program is an alternative solution to the facilities problem. Pilot projects are underway in which all or part of the food service operation is provided by a food management firm. Vending operations are also under consideration, although they are not yet suitable for dispensing complete meals.

The nature of future school food service facilities will depend upon several factors. The type of kitchen will be governed by the type of product being processed. If food manufacturers offer an increasing variety of pre-processed convenience foods, the probable result will be a significant reduction in specialized equipment in school kitchens. If convenience foods do not meet food service specifications or are not readily available, many large school districts may implement manufacturing kitchens to pre-process and prepare the equivalents of convenience foods and meals to be distributed to satellite units.

The availability of labor and prevailing wages also will have a bearing on the future course of food service facilities. Operational cost is a major area of concern, and if wage scales become prohibitive in the eyes of the school district, the alternatives of food management firms or vending may be sought, even without guaranteed cost savings.

Examination of the future of school food service facilities would not be complete without consideration being given to the future of education itself. Currently a great deal of interest and discussion is being generated over proposals favoring the neighborhood school concept. Prior to this, educational parks and centralized facilities for education from pre-school through junior college were proposed. Whichever actions or combination of actions prevail, each will include unique food service facility demands.

Much thought is being given to making schools more community oriented, to expanding the school year, and to expanding the scope of public education to include nursery and pre-school programs, child care centers, post-high school education, and senior citizens. Planning for future programs must include these components, which were beyond the scope of the present project. As these concepts reach fruition, they will figure prominently in the nature of the food service operation.

SUPPLIES

Two key factors in the area of school food service supplies are convenience and economy. Convenience in preparation, utilization, service, and disposal theoretically saves labor and reduces costs, enabling the realization of greater economy of operation. Current labor supply and cost outlooks are forcing school systems to look for ways to reduce the total manpower needed, especially manpower needs requiring special skills, in their food service programs. Rising labor costs are beginning to jeopardize the feasibility of using Federal commodities in the manner in which they have traditionally been distributed as a means of reducing program overhead. More and more school systems are examining the potential applicability of precooked meals and disposables in their school feeding programs.

Before proceeding, the reader should understand the meaning of the term "convenience." A convenience food may be defined as a menu item in a preserved state that does not require a skilled cook or baker to finish preparation and assures customer acceptance of that item. Thus, the major attribute of convenience foods is ease of preparation without requiring specialized labor skills. Also, in convenience systems both food and equipment are flexible; the system is a space saver and, therefore, has great appeal where space is not available for a complete meal preparation facility.

School systems are not alone in the effort to streamline operations and reduce costs. Mary V. Klicka reported that convenience is a keynote to current developmental efforts to support the future feeding of our armed forces under every conceivable condition. "Military and civilian populations must reduce the waste of time, manpower, and materials. Preoccupation with convenience foods has become a mandate."[18] Despite the urgency, Miss Klicka was quick to emphasize that the need for convenience does not preclude meeting the four basic criteria of acceptability, stability, utility, and nutritional adequacy.

The extent to which school food service operations have incorporated convenience items was portrayed in a recent survey on the use of convenience foods in 261 schools.[19] Results indicated that 59.4 percent used some convenience items, 22.6 percent used many items, 2.3 percent almost all items, 10.7 percent used no convenience items, and 5.0 percent did not respond. Self-service disposable bowls reportedly have wide usage in school breakfast programs, and preportioned meat products are being used extensively by food service departments throughout the nation, and are obvious examples of labor-saving products.

Even though some school systems have reduced labor costs, very few systems have been happy with their conversion to a convenience food operation. A partial reason for this may be a lack of analysis and long-range planning. There are several problems which must be analyzed before deciding upon a convenience system. These difficulties include: determining the non-food savings necessary to offset the cost of prepared foods, locating prepared foods which are consistent in quality over several procurement cycles, securing instructions for the optimum use of prepared foods, and designing prepared food specifications which are consistent with the institution's particular needs.

The use of disposables is increasing in schools. Studies have been conducted showing the advantages, respectively, of disposables or of permanent ware; the issue is as yet unresolved. One must weigh the costs of paper or plastic and its disposal against permanent ware and its maintenance.

Few school systems have compared the cost of foods in their various forms, from the non-processed raw product to completely pre-cooked and pre-packaged meals, or the cost of disposables versus permanent ware. The rise of processed foods must be accompanied by a reduction in labor hours to effect any real savings.

In the near future school systems can be expected to explore the benefits of processing their own foods in central commissaries. Such commissaries could serve several school districts in one or more states. Unfortunately, few school systems employ personnel with sufficient technical knowledge of equipment and storage facilities to embark upon a successful food processing venture. School systems seldom have the variety of technological experts or the time, funds, and personnel for research and development available to private industry. The number and variety of convenience foods available will increase; however, they will enjoy only limited use until some much needed improvements are realized, including uniform specifications, explicit labeling, analysis of nutrients, consistent packaging for institutional use, and improved acceptability.

The future portends many innovations in packaging and waste disposal. Such items as edible containers will come into general use. One firm is now promoting the use of edible, simulated potato shells as containers for serving mashed potatoes in schools and the old-fashioned ice cream cone is already being used as a serving container for salads and vegetables in addition to desserts.

Purchasing

Purchasing is a procedure which is central to a consideration of food service operations. Purchasing practices vary widely among school districts.

Open market buying appears to be the most commonly used method of purchasing both food and non-food supplies (paper goods, detergents, etc.). This is especially true of, but not confined to, school districts with less than 10,000 students enrolled. Competitive bid buying is utilized in school systems of all enrollment sizes; however, it is more prevalent in districts with a large number of students and schools.

Centralized purchasing is becoming more widely practiced. It offers the obvious cost benefits of volume buying, but it also requires adequate warehousing and transportation facilities. The latter factors have probably prevented a more widespread use of centralization of purchasing. One rather common method used in both public and private school systems is quasi-centralization of purchasing. The key to this method is a "price book" distributed to all cafeteria managers and containing bid award sheets listing particular food and non-food items, specifications, unit cost, and the name of the vendor awarded the contract. Managers purchase food only from those vendors listed and at the unit price quoted; however, all invoices are centrally paid.

Purchasing in school food service is fraught with difficulties. Open market buying makes the purchaser susceptible to fluctuating and frequently higher food costs; competitive bid buying is of little benefit without a sufficient number of purveyors to compete; centralized purchasing is subject to the warehousing and transportation costs mentioned earlier. Some food service supervisors must conduct all buying through a school district purchasing agent. This practice requires both parties to be attuned to the specialized requirements of a food service operation. School district food service operations in quite a few states must purchase milk at prices established by price-fixing authorities.

There is no single method of purchasing suitable for all school food service operations. Purchasing must be tailored to fit the situation; however, school food purchasing in the future is generally expected to encompass such techniques as the one-stop concept, cost-plus buying, and negotiated buying.

Greater use of data processing will be made in purchasing in the future. School food service has only begun to discover the multitude of ways in which it may beneficially employ data processing. Inventory control, long-range planning, and analysis of anticipated resource needs are only a few of the ways in which the computer could assist in purchasing. Some school systems are currently using computerized menu planning and many utilize the computer for payroll and storage of personnel records.

FUNDS

Eighteen states have either provided initial appropriations for school nutrition programs for FY 1971 or increased their appropriations over the preceding year according to a Michigan State Department of Education survey. Improved legislation *and* increased funds have been provided in at least four states. These developments together with the White House Conference recommendations, President Nixon's directive to states to feed all economically needy pupils by Thanksgiving, 1970, and the passage of P.L. 91-248 seemed to justify an optimistic outlook and assure a more adequate funding for future years beginning with FY 1971.

A comparison of FY 1971 appropriations for school nutrition programs with the estimated cost of overcoming unmet needs indicates that the appropriations are far from adequate. The subject is very controversial. The public seems to believe that the Federal funds provided for FY 1971 will enable states to feed an estimated 6.6 million economically needy children by Thanksgiving, that higher rates of reimbursement can be paid than the Federal rate allocations permit, and that funds are available to remove the gap and enable states to proceed rapidly with the general overall development of the program. The lateness of Congressional appropriations greatly aggravates the problem.

Two prime target areas having inadequate school food services are major cities and the 1,000 poorest counties. As pointed out earlier, these two highly needy areas had a total of 3,531 schools without facilities and nearly 1,200,000 children without food services during 1968-69.

The White House Conference recommended that a crash program (100 percent federally funded) be provided to remove such facility handicaps to bring the program to such groups by 1971. Using cost estimates from the Boston facility study mentioned earlier and a two-year period to provide central kitchens for the 37 major cities lacking facilities would require an appropriation of $62,396,000 for FY 1971. Assuming that individual school kitchens would be provided for the schools in the 1,000 poorest counties and again using the Boston cost projections and a two-year period to close the facility gap, an appropriation of $10,013,000 would be needed for FY 1971. To update and expand equipment facilities in one-half of the existing kitchens (estimated to be the number in need of additional and/or replacement equipment) in a three-year period at an estimated average cost of $1,000 per school, the Federal share of $750 from non-food assistance funds would require a FY 1971 appropriation of $12,059,000.

Public Law 91-248 requires states to develop plans for extending the program to every school in the state. This will necessitate more supervision at the school district and state levels. Federal funds are needed for district administration as well as for state administration, but to provide funds for district administration would require an amendment to the act. If Federal funds were provided for half the cost of state and district administration, state or local funds were provided for the remainder of the cost, and the staffing formula recommended earlier in this report were implemented, a Federal appropriation of $87,639,000 would be required for FY 1971. To date, the lack of evaluation, planning, and research and development funds has handicapped program development. Public Law 91-248, Section 3(3) authorizes the Secretary to grant to states up to 1 percent of the funds provided under the act (excluding Section 3 - special milk funds) for "nutritional training and education for workers, cooperators, and participants in these programs and for necessary surveys and studies." To implement this authorization for FY 1971 would require an appropriation of $14,173,000. The amounts needed for all aspects of the program are compared with the amounts appropriated for FY 1971 in Table 8-5.

States should be allowed maximum flexibility to the extent permitted by P.L. 91-248 in allocating child nutrition program funds to schools in order to adjust the program to their particular needs which vary greatly from state to state. Some administrators and concerned groups have expressed the belief that regulatory constraints hamper the flexibility of fund usage. The subject is highly controversial and only experience will determine the degree of operating flexibility permitted.

Comparative facility handicaps dramatically illustrate the need for great flexibility in funds allocation within states. In South Carolina food service is now available in all schools. Therefore, her non-food assistance needs are almost nil as compared to Ohio's. In 1969, six Ohio cities of over 250,000 population each had a total of 348 schools and 198,583 pupils without lunch services, thus giving an enormous and acute facility need.

Recommended Federal cost figures for feeding programs in Table 8-5 were based upon an estimated 1970-71 school enrollment of 53 million, 7 million of whom were considered economically needy. (The USDA estimated 7.2 million, of whom 6.6 million were in regular attendance; the USOE estimated 9.1 million; Congressman Carl Perkins estimated more than 10 million; and state school food service directors estimated 8.9 million.) Of these 7 million, 60 percent would receive free lunches and 40 percent reduced price lunches. Reliable data were not available on the ratio of free to reduced price lunches. The 60-40 percent ratio could prove to be invalid, since the maximum

TABLE 8-5
ESTIMATED COSTS OF SCHOOL FOOD SERVICE PROGRAMS
-FY 1971-
(In Thousands of Dollars)

	FEEDING PROGRAMS			
TYPE	*Recommended Federal Cost*	*FY 1971 Budget Estimate*°	*House Bill*°	*Senate Bill*°
Lunch				
Free	$ 361,620	(total free & reduced price) $200,000	(total free & reduced price) $200,000	(total free & reduced price) $356,400
Reduced Price	144,648			
Full Price	641,700	169,721	169,721	225,000
Breakfast	180,810	15,000	15,000	15,000
Milk	84,378	0	103,314	103,314
Total	$1,413,156	$384,721	$488,035	$699,714

	NON-FOOD ASSISTANCE +			
TYPE	*Recommended Federal Share*	*FY 1971 Budget Estimate*°	*House Bill*°	*Senate Bill*°
Program Update	$ 12,059			
New Facilities (Urban)	62,396			
New Facilities (Rural)	10,013			
Total	$ 84,468	$12,500	$17,500	$15,000

	ADMINISTRATIVE COSTS			
TYPE	*Recommended Federal Share*	*FY 1971 Budget Estimate*°	*House Bill*°	*Senate Bill*°
State	$ 5,139	$ 2,750	$ 2,750	$3,500
District°°	82,500			
Total	$ 87,639	$ 2,750	$ 2,750	$3,500

° "CNI Weekly Report," Washington, D.C.: Community Nutrition Institute, September 9, 1970.

°° Funds for district administration would require amendment to the current act.

Current non-food assistance may be used for any of the three purposes listed. Changes would require amendments to the current act to permit 100 per cent federal funding for the new facilities.

reduced price has been stabilized at 20 cents. Allowing 80 days' time lag for implementation and reducing availability by 5 percent during that period, calculations were made by multiplying together the appropriate enrollment figure, availability rate, participation rate, reimbursement rate, and number of days. The 80-day and 100-day figures were summed in each category to give a 180-day (school year) total, as follows:

Free lunch (needy): 4,200,000 × .95 × .95 × \$.50 × 80
+ 4,200,000 × 1.0 × 1.0 × \$.50 × 100

Reduced price (needy): 2,800,000 × .95 × .95 × \$.30 × 80
+ 2,800,000 × 1.0 × 1.0 × \$.30 × 100

Full price (non-needy): 46,000,000 × .90 × .50 × \$.15 × 80
+ 46,000,000 × .95 × .60 × \$.15 × 100

Breakfast (needy): 7,000,000 × .95 × .95 × \$.15 × 80
+7,000,000 × 1.0 × 1.0 × \$.15 × 100

Milk (needy): 7,000,000 × .95 × .95 × \$.07 × 80
+7,000,000 × 1.0 × 1.0 × \$.07 × 100

Economically needy children are becoming more evenly distributed among schools within school districts. To meet their needs without requiring non-needy children to underwrite a portion of the cost, states should be able to reimburse any school for a meal served free to an economically needy pupil at a rate up to the new 60 cent ceiling or the full cost of the lunch as intended in P.L. 91-248, Section 11(e). The new regulations may contain several roadblocks which could make it virtually impossible for states to pay sufficiently high reimbursement rates to enable all districts to serve all needy children this school year. Late Congressional appropriations clearance severely handicaps states in their program expansion efforts.

Regulation 210.11(b) states: "The maximum rate of reimbursement to be paid from general cash-for-food assistance shall be 12 cents . . . . States shall assign the same rate of reimbursement for the lunches sold in the school to children at the full price and for lunches provided to children free or at reduced price." Furthermore, if a school is unable to meet its need for free and reduced price lunches with a maximum of 30 cents reimbursement from special cash assistance, states may pay reimbursement for free or reduced price lunches at a rate in excess of 30 cents from special cash assistance funds only if "first it shall provide general cash-for-food assistance at the maximum rate of 12 cents for *all* lunches served in the school." The national Section 4 average reimbursement rate is about 5 cents.

The above regulation requires states to pay higher than feasible Section 4 rates for lunches served to non-needy pupils, thereby diluting the states' ability to assist the maximum number of needy children with Section 4 funds. This may result in the transfer of large amounts of funds.

Matching requirements of P.L. 91-248 have led to considerable confusion where private school programs are administered by the state department of education. If such states are required to provide tax funds to match Section 4 funds allocated to the private schools and to allocate state tax funds appropriated for school lunch purposes on the same basis as such funds are allocated to public schools, some of them will no doubt seriously consider discontinuing their administration of the private school program, especially where state statutes prohibit the payment of state funds to private schools. Such financial requirements would place an additional financial burden on states that administer the private school program and could constitute a backward step in overall program development.

TOTAL COST OF SCHOOL FOOD SERVICE PROGRAM PROJECTED FOR 1980

The complete nature of school nutrition services which should be provided and the number of individuals who should be served continue to be controversial. Both national and state goals must be established before valid determination of need can be made. Even among administrators of school nutrition programs labelled outstanding, no consensus was observed on either of these two questions.

The Committee on School Lunch Participation recommended in 1968 in *Their Daily Bread* that "The Congress, USDA, Boards of Education, state legislators, and school lunch administrators should begin planning now for a universal free school lunch program as part of a coordinated plan for better nutrition for all children." In addition, numerous experts studied school nutrition program needs in preparation for the White House Conference on Food, Nutrition and Health. The Conference recommendations provide guidance which any state or school district could utilize in establishing goals, developing specifications and projecting costs for meeting such goals.

The projections presented in the present chapter are very conservative, as they are based upon straight line projections of past performance. New elements which will almost assuredly accelerate program expansion and extension have not been taken into account. They will be considered in the final report of the project.

In computing the total cost of the School Food Service Program for 1980, three population projections have been utilized — Series B, Series D and the mean of Series B and D. Each of these projected student enrollments was then multiplied by 95 percent, the projected maximum participation rate; by 66.78 cents, the straight-line projection of the 1980 lunch cost; and by 180, the number of days students will be attending school. Table 8-6 gives the estimated cost of the school lunch program for 1980. The table reports each of the projections separately with Series B being the maximum, Series D the minimum, and the mean of Series B and D the midpoint. The reader should recognize that these projected enrollment figures are for the ages 5 through 17 and that, if the school serves students of pre-school age, the figures reported would have to be adjusted to reflect additional enrollment. Adjustments would also be required for a school term other than 180 days or to include lunches served during summer programs.

TABLE 8-6

1980 PROJECTED COST
(PUBLIC AND PRIVATE SCHOOLS)

	Enrollment	*ADP at 95%*	*Cost of Lunch*	*School Year In Days*	*Total Cost*
Series B	57,090,000	54,235,500	$ .6678	180	$6,519,324,042
Series D	48,700,000	46,265,000	.6678	180	5,561,238,060
Mean B & D	52,895,000	50,250,250	.6678	180	6,040,281,051

Breakfast Program

Some authorities have recommended that students from economically needy families be provided two-thirds of their daily nutritional requirement at school. To accomplish this goal, a breakfast program has been initiated to provide the additional nutrients. If the economically needy were provided this service the total cost of the school food service program would have to be adjusted. Table 8-7 shows the cost of the breakfast program for each of the projected enrollment statistics utilized in the computation of the total cost of the lunch program. The cost was also projected utilizing three estimates of what the total number of needy students will be. The cost projections do not include any reimbursements for non-needy pupils, on the assumption that they would pay the full cost of the meal.

TABLE 8-7

COST OF BREAKFAST PROGRAM FOR 1980

	Enrollment	*Breakfast ADP at 95%*	*Cost of Breakfast*	*School Days In Year*	*Total Cost*
Series B					
Income <$3,000	4,624,290	4,393,075	$ .1853	180	$146,526,640
Income <$4,000	7,592,970	7,213,321	.1853	180	240,593,124
Income <$5,000	10,790,010	10,250,509	.1853	180	341,895,493
Series D					
Income <$3,000	3,944,700	3,747,465	.1853	180	124,992,946
Income <$4,000	6,477,100	6,153,245	.1853	180	205,235,334
Income <$5,000	9,204,300	8,744,085	.1853	180	291,650,211
Mean B & D					
Income <$3,000	4,284,495	4,070,270	.1853	180	135,759,794
Income <$4,000	7,035,035	6,683,283	.1853	180	222,914,230
Income <$5,000	9,997,155	9,497,297	.1853	180	320,108,252

At the present time it has been estimated that 8.1 percent of the students are from families with an income of less than $3,000, 13.3 percent less than $4,000, and 18.9 percent less than $5,000. In 1980, if this same distribution is applicable, the breakfast program would have to reach these students. As poverty levels change, and as the percentage of economically needy pupils changes, adjustments in the projections will be necessary. Estimates given in Table 8-7 show the projected cost of the breakfast program if each of these groups were fed.

In computing the figures, 95 percent of the number of students in each category was multiplied by $0.1853, the projected food cost of breakfast, times 180 days. Again this figure is for the age group 5 through 17 and would have to be adjusted if pre-school students were provided the service. Additional adjustments would be necessary if the total cost of breakfast became allowable, or if reimbursement were continued for breakfasts served to non-needy pupils.

The projected costs of the breakfast program for economically needy pupils and the lunch program for all pupils in public and private schools for the year 1980 are summarized below (Table 8-8).

ALTERNATE FUNDING MODELS

The inadequacy of current school nutrition funding programs necessitates consideration of potential funding models for program

TABLE 8-8

PROJECTED TOTAL COSTS (BREAKFAST AND LUNCH) - 1980

	Breakfast Program Needy Pupils	*Lunch Program All Pupils*	*Total*
Series B			
Income <$3,000	$146,526,640	$6,519,324,042	$6,665,850,862
Income <$4,000	240,593,125	6,519,324,042	6,759,917,167
Income <$5,000	341,895,494	6,519,324,042	6,861,219,536
Series D			
Income <$3,000	124,992,947	5,561,238,060	5,686,231,007
Income <$4,000	205,235,334	5,561,238,060	5,766,472,394
Income <$5,000	291,650,211	5,561,238,060	5,852,888,271
Mean B & D			
Income <$3,000	135,759,794	6,040,281,051	6,176,040,845
Income <$4,000	222,914,230	6,040,281,051	6,263,195,281
Income <$5,000	320,108,252	6,040,281,051	6,360,389,303

development through the 1970's. Elements of the models must include allocation and revenue dimensions evaluated according to criteria related to maximizing human development, providing taxpayer equity, providing equitable treatment of school systems, encouraging efficient use of resources, stimulating innovative practices, and improving educational decision-making.

Several fiscal models built upon intergovernmental allocations of funds for public school current operation have been developed. School nutrition programs have not been included in the main budgetary stream of most education funding models. They have been considered as programs financed through internal accounts. A first decision must be to program nutrition programs through regular school budgets at all levels of government. Assuming that this will be accomplished, programs will then become part of a total educational package. Models 1, 2, 3, and 4, below, are examples of the nutrition portions of overall fiscal models. Models 5 through 10 relate to the funding of school nutrition programs; however, they could be combined with overall fiscal models to provide a total educational finance package.

Model 1: Variable Grants Computed on a National Standard Formula Program Cost Basis.

Federal, state, and local funds would be used to support school food service programs. The state and Federal grants would vary inversely with local and state tax paying ability, respectively. Program cost for each school district would be formula-determined on the basis of cost items related to the number of individuals in each target group by type of service (breakfast, lunch, supplemental nourishment, etc.) to be served. The amount of the Federal grant to school food service would not exceed the total cost of the statewide program and would be determined by subtracting the proceeds of a uniform local and/or state tax from the total program cost.

Model 2: Variable Percentage Equalizing Grant Computed on Locally Determined Cost Basis.

Federal, state and local funds would be used to support the program. The state and Federal percentage grants would vary inversely with local and state ability, respectively. The project costs would be determined at the local school district level and would have to be compatible with a master plan for the state previously approved by the Federal agency.

An objective formula would be used to determine the respective state and local percentage of program cost based on the number of students as well as upon taxing ability.

Model 3: Regional Area Financing (interstate or intrastate).

Federal, state, and local grants would cover allowable costs for a specific metropolitan area or other region of a state. Models 1 or 2 could be implemented. However, a uniform regional tax levy would be used to support all school districts within the region at the mean level of expenditure for the region. School districts with high evaluations would share their wealth with their less fortunate neighboring districts.

Model 4: State and Federal Assumption of Program Costs.

Federal and state grants would cover the total costs (less pupil payments) of an approved school food service program. The total actual cost of a state approved program which conforms to national standards would serve as the measure of need.

Model 5: Local, State and Federal Assumption of Program Costs.

This model is based on a combination of National School Lunch Act intent and state funding practices for other components of the education program.

a. Federal funds pay total cost of lunch served free to needy pupils.

b. Federal funds pay total cost of lunch less amount collected from sale of reduced price lunches to pupils (sale price shall not exceed 20 cents).

c. Federal funds under Section 4, National School Lunch Act (NSLA), pay not less than 50 percent of cost of purchased food for lunch served to non-economically needy pupils with rates of reimbursement adjusted annually in accordance with food cost changes as shown by the wholesale price index for processed foods (WPI proc.) changes. In 1946, the rate ceiling of nine cents was estimated to equal one-half of the average cost (18 cents) of purchased food used in a Type A lunch at that time.

d. Section 32 and 416 Federal ommodities should be supplied in accordance with national needs and present practice, commodity supply, and the schools' ability to store and use them economically, effectively, and consistent with good menu planning practices.

e. Section 6 commodities or an equal amount of supplemental cash should be supplied in accordance with provisions of the NSLA.

f. Federal funds should be provided to pay 75 percent of equipment costs for all initial and replacement equipment in all individual schools and central kitchens serving a high percent of economically needy pupils. A crash program appropriation should be made to provide the facilities needed, including the cost of buildings where necessary, to make lunches available to all schools by July 1, 1972. In unusual hardship cases these funds should meet 100 percent of the facilities cost.

g. State and local tax funds should pay administrative and other labor costs and facility and supply costs not covered by Federal funds on the same basis as the states' practice regarding other components of the educational program.

h. Parents of non-needy pupils pay for the portion of cost of purchased food used which was not reimbursed by Section 4, NSLA funds.

Model 6.

This model is a modification of Model 5.

a. Federal provisions same as for ~~items~~ a - f of Model 5.

b. State funds should meet all costs of state and system level personnel and all facility costs not borne by Federal government.

c. Local district funds cover all payroll costs for management, operational, and service personnel.

d. Local districts pay non-food supply cost and other costs not covered by Federal and/or state funds.

e. Parents pay same as for item h of Model 5.

Model 7.

This model is based on a combination of the recommendations made in *Their Daily Bread* (namely a 20 cent ceiling price for any child to pay) and in P.L. 91-248 (which authorized the Secretary of Agriculture to establish a maximum reimbursement rate not to exceed the total cost of the program).

a. Non-economically needy pupils pay 20 cents.

b. Reduced price lunch pupils pay 10 cents.

c. Pupils unable to pay served free.

d. Federal funds provided on same basis as in Model 5.

e. State pays 75 percent of state-local portion of cost.

f. School pays 25 percent, or remainder of cost.

Model 8.

This model is based on the White House Conference on Food, Nutrition, and Health recommendations made by Panel V-3, Systems of Delivery of Food and of Money for Food. The panel and the entire conference recommended the full implementation of a universal free lunch program. The panel recommended that the school should be used as the delivery system for all food services for all children who can be reached through institutional channels as follows:

a. A basic nutritional unit, one meal which meets one-third of the child's average daily nutritional requirements, should be provided without cost to every child.

b. Supplemental nutritional units should be provided as follows: (1) School breakfast which meets one-third of the child's daily requirements should be provided free for all economically needy children. (2) All children away from home over six hours should have two meals which meet two-thirds of the daily requirements on an ability-to-pay basis.

c. At the present time, Federal funds should pay 100 percent of the cost exclusive of construction. If Federal revenues are shared with the states, then the states should be expected to participate on a matching basis.

d. One percent of the annual budget should be used for evaluation, research, and development purposes.

e. Incentive grants for innovative demonstration projects should be provided.

Model 9.

This model is based on a combination of the new Federal regulations, previous rate adjustment practices, and the intent of P.L. 91-248.

a. Using a combination of Sections 4 and 11 funds, establish rates for lunches served free to economically needy children, not to exceed the state average total cost (excluding commodities) per meal for the fiscal year, or 60 cents, whichever is the lesser. The rate allocation for lunches served to needy pupils from Section 4 funds shall not be less than the estimated state average rate from Section 4 funds. (Note: This would require a change in the regulations which now require the same Section 4 rate for lunches served to needy and non-needy pupils.)

b. Reduced price meals served to economically needy pupils shall be reimbursed at the same rate as in (a) above, less the amount collected from the pupils. The sale price of such lunches shall not exceed 20 cents.

c. Reimburse full-pay lunches at variable rates based on an objective need formula. Such rates should not be less than the 5 cent floor intended in Section 4 of the NSLA as amended in 1962, nor should rates exceed one-half of the cost of purchased food used per meal as was intended in the Act when passed in 1946 or the Federal rate ceiling for such schools, whichever is the lesser. The current Federal rate ceiling for meals served to non-needy children is 12 cents. The rate ceiling should always equal or exceed one-half of the purchased food cost.

d. Every three months, review and revise (1) projections of cost and number of meals served by type, and (2) reimbursement rates and finance ratios as needed to insure a balanced budget at the end of the year.

Model 10.

This model is a modification of Model 9.

a. Proceed as indicated in Model 9, items a-c.

b. Every three months review funds status and develop outlook report. Do not adjust rates downward below need. Submit outlook report including a request for additional funds needed, if any, and/or amounts of funds that can be released to the superintendent, State Department of Education, USDA, and appropriate congressional committees. Exhaust funds and operate as directed by the superintendent at a deficit, or close the program.

Based on the long-time under-funding of the program, and the sentiments and commitments expressed by the Harvard Center for Law and Education and the Columbia University Center on Social Welfare Policy and Law, appropriation decision-makers may never adequately fund the program until programs are closed during a school year because of funds exhaustion and the resultant public pressure forces Congress, state legislatures, and school boards to provide more adequate funds for the program.

Models other than number 10 do not take into consideration the provision of Section 11 of the Act which states "there are hereby authorized to be appropriated for the fiscal year ending June 30, 1971, and each succeeding fiscal year such sums as may be necessary to provide special assistance to insure access to the school lunch program under this act by children of low-income families."

SUMMARY

One of the major responsibilities of the SFSP was to advance proposals which, if implemented, would speed the expansion and improvement of school nutrition programs. A later report will contain detailed findings, conclusions and recommendations.

School nutrition programs have not been afforded the luxury of adequate funding. The basic causal factor for this situation is the lack of development of, or commitment to, a goal. There has been little, if any, long-range planning in terms of eventual services to be provided or the timing of their implementation. Without long-range planning toward a predetermined goal, meaningful costing of programs cannot be done. It follows that without costing, sound budgets calling for the necessary funding cannot be developed.

Ample evidence has been cited to show the erratic funding pattern of school food service programs at all governmental levels — Federal, state, and local. It has also been established that, historically, government financial support has borne too little relationship to program needs. School feeding has been regarded as a service to, and not a part of, the educational program and has suffered accordingly.

Major impediments to the progress of the current project have been the lack of uniform terminology, the lack of comparable data, and the lack of availability of information at district, state, and Federal levels. A paramount concern should be the development of a reporting system encompassing the basic purposes of providing information for planning resource allocations for future activities and for controlling operations within the system. The immediate initiation of a nationwide project to improve the data and control system is strongly recommended. A cooperative project involving such groups as USDA, USOE, ASBO, ASFSA, and AASA similar to the USOE Handbook II concept would expedite full and early implementation of needed changes.

By any standard of sound management practices, the administration of many school food service systems is not as efficient, effective, or economical as is feasible. There is a need for standards establishment for personnel recruitment and training, for adequate salary and staffing formulas, for improved organization structures and operational practices, for the full use of modern technological developments, and for the willingness to forget status quo and adjust the program in accordance with new developments.

A need also exists for increased cooperation between the private sector and government personnel. Unless special emphasis is placed on nutrition education and food habits are improved, the poverty and dropout cycle cannot be broken. Initiation of a nationwide plan, cooperatively developed, that is child-education and community-oriented, should establish minimum national standards of achievement and provide a floor below which no state would be permitted to fall in operating its nutrition education and food service program.

Much more effective and intensive information-finding, planning and evaluation, and research and development systems are needed. Decision-makers, administrative personnel, and school food service operators all need more current, complete, and valid information than is presently available for forecasting and costing purposes. Solid research is virtually unknown and desperately needed in all aspects of the program. Rarely has so important a program operated with so little knowledge. Until a new system is adopted after thorough research and study, the present system needs reform along the lines recommended in other sections of the present report.

FOOTNOTES

1. The National School Food Service and Nutrition Education Finance Project was wholly supported by a grant under Contract Number 12-25-400-68 of the United States Department of Agriculture; however, the findings and recommendations reported herein are not necessarily those of USDA, but solely those of the Contractor.

2. Martin Kreisberg, *Food Service in Public Schools,* Marketing Research Report No. 681, October, 1964; *Food Service in Private Elementary and Secondary Schools,* Marketing Research Report No. 678, October, 1964.

3. U.S. Department of Agriculture, Economic Research Service, *Food Service in the Nation's Schools: A Preliminary Report.* Washington: U.S. Government Printing Office, 1969.

4. *Statistical Appendix to Annual Report of the Secretary of the Treasury on the State of the Finances FY Ended June 30, 1969.* Washington: U.S. Government Printing Office, 1970. pp. 20-21.

5. *Financial Status of the Public Schools, 1970.* Washington, D.C.: National Education Association, p. 31 and p. 34.

6. *School Lunch Program (Fiscal Years 1947-1969).* Washington, D.C.: United States Department of Agriculture, Agricultural Marketing Service, p. 2.

7. U.S. Department of Agriculture, op. cit.

8. "Percent of Total Lunches Served Free or Reduced Price, FY 1963-68, By State and District Offices," Washington: United States Department of Agriculture, 1968. Unpublished.

9. "Child Feeding Programs FY 1968 (1,000 Poorest Counties)". Washington: United States Department of Agriculture, 1968. Unpublished.

10. "Child Feeding Programs, Revision 3," Washington: United States Department of Agriculture, 1970. Unpublished.

11. U.S. Department of Agriculture, op. cit.

12. "Urban Lunch Study — Fiscal Year 1969." Washington: United States Department of Agriculture, 1969. Unpublished.

13. "Value of USDA Commodities Distributed and Cash per Child to All States and Territories" (Computed from USDA Selected Statistics.) Salt Lake City: Utah State Board of Education, March, 1969, p. 1.

14. Myrtis Keels Jeffers, *State Provisions for School Lunch Programs.* Washington: U.S. Government Printing Office, 1952.

15. "Industry Wage Survey, Educational Institutions: Nonteaching Employees October 1968 and March 1969," Bureau of Labor Statistics of the United States Department of Labor. Washington: U.S. Government Printing Office, 1970.

16. "New Trends in School Building," *School Management* (July, 1969), p. 58.

17. Ganteaume & McMullen, Inc., *School Lunch Study.* Boston: The Public Facilities Commission, City of Boston, Massachusetts, April, 1968, p. 21.

18. Mary V. Klicka, "Convenience — Keynote of the Future," *Journal of Home Economics* (November, 1969), pp. 707-716.

19. "Chains and the Components of Convenience," *Institutions* (August, 1970) p. 70.

CHAPTER 9

Pupil Transportation

DEWEY H. STOLLAR

Pupil transportation evolved as a response to the problem of meeting educational needs of students living in sparsely populated areas. As educational demands became more complex, school attendance centers became larger, necessitating greater travel distances for students. Originally, school administrators had attempted to solve the problem by locating school buildings so they would be within walking distance of most students. This was the major reason for the creation of the very small elementary school district which initially existed in almost all states. The problem of distance was even more acute for secondary education. Therefore, some form of transportation to school has existed as long as have the public schools. In the early days, however, transportation was considered the responsibility of the parent, and the school administrator had no official interest in the matter. Moreover, whether or not children attended school was, in most states, a question for the parents to decide.

Both the decrease in rural area populations and the increase in size of urban centers tended to increase the need for pupil transportation. Furthermore, the obvious possibility of broadening the experiences available to pupils through the use of school buses resulted in an added dimension to transportation, i.e. the use of school buses as instructional tools in addition to the "to and from school transportation."

Pupil transportation has been the fastest growing aspect of the school system during the last fifty years. It developed so rapidly that pupil transportation has not always been well-planned, systematically organized, nor well administered. Initially, there was little or no leadership from the state or local administrators. Parenthetically, transportation services were often unsafe and unduly costly.

The purpose of this chapter is to give an overview of pupil transportation. More specifically, the first portion of the chapter discusses the early legal and financial basis for pupil transportation. The second phase of the chapter is devoted to a presentation of the present status of pupil transportation. This focuses upon the present magnitude of pupil transportation, present financing, and educational issues affecting transportation. The final phase of the chapter presents the future status of pupil projection, variables which may influence future needs, projected pupil transportation needs for 1980, possible pupil transportation financing for 1980, and future instructional possibilities for transportation.

THE DEVELOPMENT OF PUPIL TRANSPORTATION

Early Legal Basis for Transportation

The transportation of pupils is as old a practice as the establishment of the first schools in this country. In the beginning, pupil transportation was a private matter, and parents, rather than the state or local government, provided the means to transport their children to and from school. In pioneer days, a child who did not live within walking distance of a school might drop out, journey to and from school by whatever means his family provided, or might board with a family in close proximity to the school.

History does not disclose the exact date that pupil transportation at public expense was first introduced in this country. However, there was opposition to the concept of pupil transportation at public expense when the idea did appear. Some reasons given by critics were related to: (1) uncertainty about the expense involved, (2) doubt that pupils could be transported safely and comfortably, (3) long absence of children from home (they would have to leave too early and would not get back in time to "do chores"), and (4) belief that bad influences lurked across the township line.

In 1869, a statute was enacted by the general court in Massachusetts that provided for and legalized the expenditure of local funds for pupil transportation. This was the first statute legalizing the expenditure of local funds for transportation. In summary, the statute stated:

> Any town in the Commonwealth may raise by taxation or otherwise an appropriate amount of money to be expended by the school committee at their discretion, in providing for the conveyance of pupils to and from the public schools.[1]

The act was important because it established pupil transportation as ". . . a legitimate part of the community's tax program."[2]

Following the example of Massachusetts, other states enacted legislation to provide for pupil transportation.[3] A Vermont statute in 1876 gave to the prudential committee of school districts the authority to arrange and provide for pupil transportation. Maine, in an 1880 law, gave municipal officers and the school committee, or supervisory personnel, authority to close any school in the district in which the number of pupils was considered too few to continue a school and to expend the discontinued school's funds, using not more than half of the money for pupil transportation.[4]

During the period 1881 through 1894, four more states — New Hampshire, Connecticut, Ohio, and Florida — enacted laws that allowed the public conveyance of pupils to and from public schools. In some cases, the state restricted the amount that could be spent for transportation. Until 1910, most state statutes usually permitted pupil transportation only when schools were discontinued. For example, Missouri, Montana, Nebraska, New York, Ohio, Pennsylvania, Rhode Island, South Dakota, and Wisconsin permitted the transportation of those pupils whose schools had been discontinued, or if the school had voluntarily closed, or if a district had contracted to send its pupils to a school in another district.[5]

The date of the first transportation law in each of the states in the United States is shown in Table 9-1. Pupil transportation in 43 of the original 48 states listed in Table 9-1 was operated under legislation specifically enacted for the purpose. Five states — Delaware, Florida, New Mexico, Utah, and Wyoming — permitted transportation under the general authority granted to school trustees or directors.[6]

Thus, the period from 1869-1910 marked the greatest increase in pupil transportation as 25 states initiated provisions for this service. Fifty years after the first enactment authorizing pupil transportation (1869), the conveyance of pupils at public expense was a reality in 48 states and in the territory of Hawaii.

Early Financing of Transportation

During the last half of the nineteenth century, two developments intensified the need for pupil transportation at public expense. One was the growing awareness that the welfare of a state required that all children receive commensurate education. This concern was eventually translated into compulsory attendance laws. In turn, this

TABLE 9-1

FIRST TRANSPORTATION LAWS[7]

State	*Year*	*State*	*Year*
Massachusetts	1869	Maryland	1904
Vermont	1876	Oklahoma	1905
Maine	1880	Utah	1905
New Hampshire	1885	Missouri	1907
Florida	1889	West Virginia	1908
Connecticut	1893	Colorado	1909
Ohio	1894	Mississippi	1910
New Jersey	1895	Arkansas	1911
New York	1896	Georgia	1911
Iowa	1897	Illinois	1911
Nebraska	1897	North Carolina	1911
Pennsylvania	1897	Kentucky	1912
Wisconsin	1897	South Carolina	1912
Rhode Island	1898	Arizona	1912
Kansas	1899	Idaho	1913
North Dakota	1899	Tennessee	1913
South Dakota	1899	Nevada	1915
Indiana	1899	Alabama	1915
California	1901	Texas	1915
Minnesota	1901	Louisiana	1916
Washington	1901	New Mexico	1917
Michigan	1901	Delaware	1919
Montana	1903	Wyoming	1919
Oregon	1903	Hawaii	1919
Virginia	1903	Alaska	1933

Sources: J. F. Abel, "Consolidation of Schools and Transporation of Pupils," *Bureau of Education Bulletin,* No. 41 (Washington, D.C.: Government Printing Office, 1923), p. 22; Laws of the Territory of Hawaii, 1919, Act, CXXVI: Territory of Alaska, *Session Laws, Resolutions and Memorials,* 1933, Chapter XLII, Sec. 7 (h).

necessitated either the close proximity of a school or transportation of pupils. The other development was the increasing costs of public education and an awareness of the changing character of the school program. The need to consolidate attendance centers was justification in many states for laws authorizing pupil transportation at public expense.

The town of Greenfield, Massachusetts, under the 1869 statute, united three small schools with a savings of $175.00, after paying $127.50 for conveyance of pupils.[8] The town of Quincy, Massachusetts took similar action in 1874. A seaport southeast of Boston, Quincy spent $521.12 to transport children to and from school in horsedrawn vehicles. This is believed to be the second school district in which pupils were transported under the Massachusetts law of 1869.[9]

By 1910, 34 of the states had enacted laws permitting, under restrictions that varied widely in the different states, the use of public funds to pay for the transportation of children to and from school. Fourteen states were reporting amounts spent for transportation as a separate item of school expenditure. The names of those states and the amounts reported for 1910 are listed below:[10]

Massachusetts	$310,442.00
Vermont	92,019.00
Maine	114,795.00
Connecticut	72,077.00
Florida	24,133.00
New Jersey	145,737.00
Indiana	155,390.00
Minnesota	62,253.00
Maryland	5,210.00
New Hampshire	57,996.00
North Dakota	104,150.00
Virginia	46,908.00
Iowa	25,434.00
Louisiana	54,000.00

For a more comprehensive view of early pupil transportation, see Table 9-2. Nationwide, in 1920, $14,514,544 was being spent to transport 356,401 pupils. The districts were transporting 5.6 percent of the total enrollment at a cost equalling 1.8 percent of the total operating expense of the schools. This amounted to $40.72 per pupil annually for transportation. Some states were reporting daily transportation costs as high as $.33 per day per child. Others reported monthly costs of $3.00-plus per child. This table reflects the non-uniformity of early cost accounting.

States such as North Dakota, Vermont, and Iowa with low pupil density were spending more than 6 percent of the total current expense of the school for transportation. States varied greatly in numbers of pupils transported, but consolidation tended to increase the need for pupil transportation. School consolidation and increasing cost of transportation showed a direct relationship. The New England states furnished leadership and impetus to the pupil transportation movement. Some states entered the field of pupil transportation by passing permissive legislation allowing a particular city, county, or other geographic area to develop a transportation system.

Historically, the automobile and good-roads programs, both national and state, have hastened consolidation and pupil transportation. In 1914, there were 1,711,000 motor vehicles registered in the

TABLE 9-2

TRANSPORTATION OF PUPILS

States	*Date of first trans-portation law.*	*Date of first avail-able data on amount spent for trans-portation.*	*First reported amount spent for trans-portation.*	***Amount** spent for **transpor-tation** in 1920.*	*Per cent of total current expense of the schools.*	*Num-ber of children trans-ported, 1920.*	*Per cent of **the** average daily attend-ance of the State.*	*Per cent of **total** enroll-ment in con-soli-dated schools.*	***Cost of transpor-tation** per pupil per year.*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
Continental United States	.....	.....	.....	$14,514,544	[1] 1.8	356,401	[2] 5.6	.....	.....
Alabama	[3] 1915	[4] 1918	$9,770	171,925	2.2	7,058	1.9	19	[5] 3.33
Arizona	1912	.....	.....	.....	.....	.....	.....	.....	
Arkansas	1911	.....	.....	.....	.....	1,032	.3	.....	.....
California	1901	1918	272,782	630,797	1.6	.....	.....	.....	.....
Colorado	1909	.....	.....	.....	.....	[6,7] 11,400	7.5	39.3	.....
Connecticut	1893	1898	11,416	314,340	2.2	6,030	2.9	.....	.....
Delaware	1919	1920	68,401	71,444	4.6	.....	.....	.....	.....
Florida	[8] 1889	1901	3,225	216,691	3.6	7,966	4.8	.....	27.29
Georgia	1911	1911	19,339	69,477	.8	9,499	2.03	52.4	12.40
Idaho	1913	1914	35,000	301,345	4.5	1,526	1.8	.....	.....
Illinois	1911	1912	16,987	163,254	.2	.....	.....	.....	.....
Indiana	[9] 1899	1904	[10] 590	1,921,035	6.6	60,142	13.1	.....	.....
Iowa	1897	1907	25,758	1,354,051	4.1	[7] 34,743	8.5	50.6	.....
Kansas	1899	.....	.....	.....	.....	[8] 4,000	1.3	33.7	[10] .16-0.23
Kentucky	1912	1914	15,222	95,785	1.3	.....	.....	.....	[10] .10-.19
Louisiana	[11] 1916	1909	45,808	471,059	5.1	18,229	7.1	16.9	26.00
Maine	1880	1896	47,739	296,651	4.9	8,889	7.6	.....	33.37
Maryland	1904	1905	[12] 508	64,734	.8	.....	.....	.....	.....
Massachusetts	1869	1889	22,118	858,840	2.1	[13] 25,935	5.0	.....	[10] .20-.24
Michigan	1903	1914	49,497	155,116	.4	.....	.....	.....	.....
Minnesota	1901	1904	4,258	976,475	3.4	[7] 20,450	5.1	.....	.....
Mississippi	1910	1911	[5] 345	246,078	5.5	30,772	11.8	49.7	[5] 3.18
Missouri	.....	.....	.....	.....	.....	c	.....	.....	
Montana	1903	1914	26,636	297,796	2.9	3,293	3.5	27.1	[13] .33
Nebraska	1897	1920	.....	[6] 127,500	.7	[7] 3,517	1.5	.....	.....
Nevada	1915	1920	.....	34,115	2.8	.....	.....	.....	.....
N. Hampshire	1885	1906	38,527	195,127	5.3	.....	.....	.....	.....
New Jersey	1895	1906	4,421	749,895	2.1	21,727	4.5	.....	.....
New Mexico	[14] 1917	1918	20,835	136,881	3.8	5,119	8.6	.....	.....
New York	1896	1913	65,445	470,485	.4	.....	.....	.....	.....
N. Carolina	1911	.....	.....	.....	.....	7,936	1.6	.....	.....
North Dakota	1899	1906	28,896	876,876	7.0	21,153	16.4	.....	.....
Ohio	1894	1915	473,470	1,651,157	2.9	.....	.....	.....	.....
Oklahoma	1905	1920	.....	[15] 228,397	1.2	8,420	2.3	.....	.....
Oregon	1903	1920	.....	2,286	.02	[7] 2,029	1.4	.....	[14] .33
Pennsylvania	1897	1913	425	83,962	.1	[7] 4,520	.35	.....	.....
Rhode Island	1918	1918	21,633	32,490	.7	.....	.....	.....	.....
S. Carolina	[16] 1912	1914	11,927	[17] 25,121	.4	[17] 1,723	.51	.....	[17] 13.5
South Dakota	1899	1913	54,399	211,947	2.3	2,388	2.4	27	.....
Tennessee	1913	1915	18,920	88,883	1.4	5,870	1.2	.....	[5] 1.00-9.10
Texas	[18] 1915	1917	29,631	70,088	.2	2,683	.3	.....	.....
Utah	[19] 1905	1916	93,091	170,286	2.7	5,000	5.1	.....	.....
Vermont	1876	1893	9,133	228,532	6.5	4,467	8.8	.....	.....
Virginia	1903	1906	2,102	153,796	1.5	[7] 8,835	2.5	.....	.....
Washington	1901	[20] 1911	[20] 44,523	.....	.....	.....	.....	.....	.....
West Virginia	1908	.....	.....	.....	.....	.....	.....	.....	.....
Wisconsin	1897	1912	36,468	225,699	.9	.....	.....	.....	.....
Wyoming	[21] 1919	1918	29,255	74,128	2.3	.....	.....	.....	.....

[1] Computed on returns from 40 States

[2] Computed on returns from 31 States.

[3] Permitted in Mobile County at an earlier date

[4] Mobile County only.

[5] Per month.

[6] Estimated.

[7] Data for 1921.

[8] Assumed in powers of county boards.

[9] Transportation was carried on under general powers of township boards as early as 1888.

[10] Per day.

[11] Transportation also dates to 1902 under general powers of parish boards

[12] Baltimore County

[13] Data for 1919.

[14] Not a specific authorization. County board created.

[15] Special report for 98 schools.

[16] Permitting State aid for transportation.

[17] Data for 1918.

[18] A law of 1905 was also construed as permitting transportation

[19] In powers of county district board.

[20] Special report.

[21] Not specific; assumed in powers of district board.

Source: J.F. Abel, Supra, p. 58.

United States; 6,147,000 in 1917; 9,232,000 in 1920; and 12,238,375 in 1922. The estimated expenditure for roads in 1910 was $120,000,000, and in 1921, $767,000,000. When the area served by any one school had to be measured in terms of the walking strength of children, 3 miles in all directions from the schoolhouse was about the maximum limit. If horsedrawn vehicles were used, the limit could be extended to 6 or 7 miles. Under similar conditions, with the same or less expenditure of time and strength on the part of children, an auto bus could convey pupils from 15 to 20 miles. As a time-limit proposition, the automobile has increased from 25 to 45 times the possible area that may be served by one school. Many communities received a tremendous economic surge as a result of roads necessitated by motorized pupil transportation.

Table 9-3 shows the growth in pupil transportation from 1926 to 1962. Approximately 91 percent of the growth in pupil transportation prior to 1963 occurred between these dates. According to U.S. Office of Education reports, approximately 1,112,000 elementary and secondary school pupils were transported to and from school at public expense in 1925-1926, while in 1961-1962 more than 13,687,000 pupils were transported. Factors contributing to this phenomenal growth were the rapid decrease in the number of one-teacher schools, increased availability of secondary education with a diversity of educational programs, the concurrent increase in "holding power," and the provision of transportation where it could not be or had not been provided in the past.

In 1925-1926, the per pupil cost of transportation was $31.53 per year. This decreased to a per pupil cost of $19.29 in 1933-1934. Since that date there has been a gradual increase in cost until the per pupil cost was $39.46 in 1961-1962.

The number of pupils per vehicle has increased with some fluctuations during this time span. Thirty-three pupils were transported per vehicle in 1929-1930. This number had increased to 72 pupils by 1961-1962. There were two reasons: an increase in capacity of vehicles as well as an increase of multiple runs in transporting pupils.

Transportation has become an important segment of the total cost of educating pupils. In 1941-1942, 4.5 percent of the total cost of current expense was allocated for transportation on a nationwide basis. Eighteen and three tenths percent of the total enrollment was transported. Throughout the less wealthy southern states, approximately 30 to 40 percent of the students were transported at a cost of 8 to 10 percent of the current expense.

TABLE 9-3

STATISTICS ON PUPIL TRANSPORTATION
FOR SELECTED YEARS, 1926-62

Year	*Pupils Transported At Public Expense*	*Average Pupils Per Vehicle*	*Vehicles Used*	*Public Funds Expended (Excluding Capital Outlay)*	*Annual Cost Per Pupil*
1925-1926	1,111,553		—[a]	$ 35,052,680	$31.53
1929-1930	1,902,826	33	58,016	54,823,143	28.81
1933-1934	2,794,724	36	77,042	53,907,774	19.29
1937-1938	3,769,242	41	92,152	75,636,956	20.07
1941-1942	4,503,081	49	92,516	92,921,805	20.64
1945-1946	5,056,966	57	89,299	129,756,375	25.66
1949-1950	6,980,689	61	115,202	204,611,283	29.31
1953-1954	8,906,126	60	147,425	308,704,303	34.66
1957-1958	11,343,132	66	170,689	419,539,863	36.99
1961-1962	13,687,547	72	191,160	540,168,114	39.46

[a] Not available.

Source: David T. Blose, *One-Room Schools and Transportation of Pupils,* Circular No. 195, Washington, D. C., Federal Security Agency, Office of Education, 1937-1938, Table 1; David T. Blose, *Statistics of State School Systems,* 1945-1946, Washington, D. C. Federal Security Agency, Office of Education, 1949, Table 20, p. 57; David T. Blose and Henry F. Aloes, *Statistics of State School Systems,* 1938-1940 and 1940-1942, Washington, D. C., Federal Security Agency, Office of Education, 1944, Table 17, pp. 76-77; David T. Blose and E. Glenn Featherston, *Statistics on Pupil Transportation,* 1949-1950, Washington, D. C., Federal Security Agency, Office of Education, n.d. (mimeo); and *Statistics on Pupil Transportation,* 1961-1962, Washington, D. C., U. S. Office of Education, 1963, p. 4.

Early transportation service was instigated in most states on the initiative of local superintendents who saw a need for it in their own schools. There were no precedents and almost no state standards or controls to serve as guides. Standards increased as state support of transportation increased. The need for standards was accelerated by the focus upon pupil safety. States set standards for improving efficiency and economy of service. Many states established controls to eliminate minimum distance pickups and efficiency in routing. This has led to national uniformity in certain aspects of pupil transportation.

Early Role — To and From School

In early years, many local superintendents were reluctant to become involved in a transportation program. Contracting with a local bus owner to transport children to school and transferring most of the responsibility to him, was a fairly easy way to discharge this responsibility. Thus, early in the history of pupil transportation, the program was restricted to transporting pupils to and from school. The premise has been almost universally accepted in this country that the State has the responsibility for making at least 12 years of education available to all youth. This premise has not been fully implemented in all states because of a lack of pupil transportation.

Expanding Role — Instructional Program

As the transportation system progressed from a contracted service to a board owned and operated system, many administrators began to question the feasibility of buses standing idle all day. Thus, the practice came into existence of using school buses for athletic events, interscholastic contests, visits to health clinics, and various school activities. Some districts undoubtedly misused buses and as a result several states passed special laws to limit or control the use of buses for such purposes.

Featherston and Culp have compiled arguments for and against the use of school buses for instruction. Some of the arguments presented by opponents of such use are as follows:

1. School buses were originally provided by the American public to make education available to boys and girls who lived beyond a reasonable walking distance from school.

2. Field trips generally, and school bus trips specifically, are frills and are not legitimately a part of the hard work of education.

3. The limited financial support given most public schools does not permit the use of school buses for instructional purposes.

4. The use of school buses for instructional purposes represents unfair competition for commercial bus lines.

5. The use of school buses for instructional purposes conflicts with

their regularly scheduled use for transporting pupils to and from school.

6. School bus trips are actually ineffective as instructional activities.

7. The use of school buses for instruction purposes, even if effective, is limited to relatively few class groups for special projects, and is consequently discriminatory and therefore unworthy of approval.

8. Other media such as radio, television, and films can and should be used to supplement vicarious learning when necessary, at less cost than school bus operation and with greater coordination with classroom activities.

The proponents of the use of school buses for instructional purposes readily admit that most of the foregoing arguments contain some merit, but the weight of evidence is preponderantly on the side of using buses to extend and enrich the education program. Counterarguments used to support this belief include the following:

1. The fact that school buses were originally provided to make educational opportunities available to pupils argues not against, but for, the use of school buses for instruction enrichment.

2. The argument that school bus trips are "fads and frills" is part of a general conviction that learning is achieved only through constant, arduous study; that the best learning is least pleasant; that understanding evolves from stoicism; and that strength springs from endurance of adversity.

3. The limitation of funds for public school support is a good reason for seeking effective teaching tools, rather than an argument against instructional use of buses.

4. The argument that instructional use of school buses is unfair competition for commercial bus operators is inapplicable.

5. The argument that instructional use of school buses conflict with their use to transport children to and from school is rejected because the regular schedule for bus service to and from school uses but a small fraction of the day.

6. If school bus trips are ineffective in instruction and result in mere entertainment, the fault lies with the teacher and administrator and not with the principle of the bus use.

7. The argument that there is discrimination in the use of school buses for instructional purposes is invalid because many school activities do not provide participation for all students.

8. The argument that such media as radio, television, and films should be the means to provide concrete experience does not invalidate the use of buses as instructional tools.[11]

The use of school buses for instructional purposes raises a number of legal questions. The utilization of school buses for instructional trips is specifically authorized by law in 20 states and in 2 other states the law is interpreted as granting this authorization. In some instances, the use is confined to certain delineated activities; in some cases, it is restricted by such terms as "school coordinated activities." School transportation systems are used for school activities in all states to some degree but there are no statistics available concerning numbers and kind of trips, miles traveled or number of pupils involved. It can be postulated that transportation for instruction is becoming more common. Some school systems are experimenting with the feasibility of utilizing the time period spent transporting students between home and school for instructional purposes. Recent breakthroughs in educational technology will enhance the possibility of instruction on bus routes.

The Effect of Reorganization

For the past forty years, many states have become increasingly concerned with the dilemma of helping local districts finance pupil transportation. The acuteness of the problem was accentuated by increased state activity in reorganization of school districts and consolidation of school attendance areas which received considerable impetus during the late 1940's and continued through the [illegible]. School district reorganization practices have resulted in the closing of many small schools, particularly in non-urban areas. As schools were vacated, it was necessary to transport pupils to larger units. Hence, increased demands were placed upon transportation facilities, and a greater proportion of the financial budget has been required for such services.

Advancements in the automotive and school bus industries, along with concurrent improvement of all types of highways and roads, supported school reorganization and consolidation. The disappearance of the little red schoolhouse as a typical American institution, and the appearance of larger attendance areas, with corresponding extension of educational opportunity, has resulted, to a great degree, from ingenuity and advancement in the field of transportation. The rural areas of this country, in particular, owe much of the credit for their improved educational programs to efficient and effective pupil transportation systems.

PRESENT STATUS

Pupil transportation to and from school is an expensive and important service presently being provided by thousands of school districts in the United States. The daily transportation of millions of boys and girls in the 50 states now constitutes an important part of the big business of American education. During 1968-1969 more than 18,000,000 pupils were transported in 238,000 vehicles, at a cost of over $900,000,000, excluding large sums for capital outlay. (Table 9-4)

TABLE 9-4

GROWTH OF SCHOOL TRANSPORTATION IN THE UNITED STATES

Year	*Number of Pupils Transported*	*Cost per Pupil Transported*	*Number of Vehicles Used*	*Cost per Vehicle*	*Expenditure (Excluding Capital Outlay)*	*Number of Pupils per Vehicle*
1968-69	18,467,944	48.81	238,102	3,785.58	901,353,107	78
1967-68	17,271,718	47.63	230,578	3,567.54	822,595,699	75
1966-67	16,684,922	45.77	221,722	3,444.00	763,600,617	75
1965-66	16,423,396	42.40	210,692	3,305.00	696,325,421	78
1964-65	15,413,000	41.69	206,000	3,119.55	642,627,000	75
1963-64	15,559,524	39.35	200,116	3,059.78	612,310,333	78
1962-63	14,247,753	40.57	195,397	2,958.17	578,017,634	73
1961-62	13,687,547	39.46	191,160	2,825.74	540,168,114	72
1960-61	13,106,779	38.59	185,869	2,721.03	505,754,515	71
1959-60	12,700,989	37.34	179,780	2,637.68	474,202,128	71
1958-59	12,021,372	36.72	176,222	2,504.81	441,402,595	68
1957-58	11,343,132	36.99	170,689	2,458.00	419,539,863	66
1956-57	10,683,643	35.83	164,863	2,321.64	382,751,973	65
1955-56	10,199,276	34.94	159,764	2,230.47	356,349,783	64
1954-55	9,509,699	34.60	154,057	2,135.80	329,035,047	62

Source: Data obtained from National Commission on Safety Education of the National Education Association. (1968-1969).

Data beginning with 1964-65 and prior to those years are based on reports compiled by the United States Office of Education.

Present Magnitude of Pupil Transportation

Forty-two percent of all pupils presently attending public elementary and secondary schools are recipients of this service; this represents approximately 4 percent of the total current expenditures for public education. The greater the transportation needs and cost, the more the instructional program may be depleted in school districts with limited budgets. Although the 50 states have accepted the principle of state responsibility for education, it varies immensely from one state to another. This is especially true in respect to financing transportation of pupils. The approaches are as varied as the number of states. In a few states, most of the cost is borne by the parents; in others, the local district defrays a major part of the cost; some states provide nearly all the money needed for this necessary service to the school program.

Table 9-4 shows the longitudinal transportation trends for the period 1954-1955 to 1968-1969. The number of pupils transported increased from 9,509,699 in 1954-1955 to 18,467,944 in 1968-1969. The number of pupils almost doubled during this period, or, more precisely, the number of pupils transported increased 94 percent during this time span. During the same time period, per pupil expenditures increased from $34.60 to $48.81, an increase of 41 percent. The same time period showed an increase in expenditure (excluding capital outlay) from $329,035,047 to $901,353,107 or an increase of 174 percent. During this period pupils transported per bus increased from 62 pupils to 78 pupils. This reflects both an increase in capacity of buses as well as the increasing use of multiple runs.

Table 9-5 shows the growth of school transportation in the United States in terms of 1957-59 dollars. On this basis, the cost per pupil transported has increased, from 1954-55 to 1968-69, by only 7 percent — from $37.01 to $39.52. Parenthetically, the 1954-55 actual expenditure of $329,035,047 becomes $351,909,141 in 1957-59 dollars, while the 1968-69 actual expendure of $901,353,107 is reduced to $729,840,572 in 1957-59 dollars.

Table 9-6 shows the percent of pupils being transported in 1968-69. The percentage of pupils transported ranged from 64 percent for West Virginia to a low of 12 percent for Hawaii. The mean percentage transported for the 50 states and the District of Columbia was 42 percent.

Table 9-7 shows a more detailed review of statistics on school transportation for 1968-69. The mean per pupil expenditure for transportation was $48.64. The range in expenditure for per pupil transportation was from a low of $19.02 in North Carolina to a high of $189.19 in Washington, D.C. Alaska has the highest per pupil expenditure for transportation of the 50 states. States with high per pupil expenditure for transportation tend to be states with relatively sparse pupil population density.

TABLE 9-5

GROWTH OF SCHOOL TRANSPORTATION IN THE UNITED STATES
(1957-1959 DOLLARS)

Year	*Number of Pupils Transported*	*Number of Vehicles Used*	*Expenditure (Excluding Capital Outlay)*	*Expenditure (Exluding Capital Outlay) 1957-1959 Dollars*	*Cost per Pupil Transported 1957-1959 Dollars*
1968-1969	18,467,944	238,102	901,353,107	729,840,572	39.52
1967-1968	17,271,718	230,578	822,595,699	692,420,622	40.09
1966-1967	16,684,922	221,722	763,600,617	665,737,242	39.90
1965-1966	16,423,396	210,692	696,325,421	624,507,104	38.03
1964-1965	15,413,000	206,000	642,627,000	589,566,055	38.25
1963-1964	15,559,524	200,116	612,310,333	570,121,352	36.64
1962-1963	14,247,753	195,397	578,017,634	547,365,189	38.42
1961-1962	13,687,547	191,160	540,168,114	515,427,589	37.66
1960-1961	13,106,779	185,869	505,754,515	487,709,271	37.21
1959-1960	12,700,989	179,780	475,202,128	463,540,692	36.50
1958-1959	12,021,372	176,222	441,402,595	441,402,595	36.72
1957-1958	11,343,132	170,689	419,539,863	419,539,863	36.99
1956-1957	10,683,643	164,863	382,751,973	397,085,219	37.17
1955-1956	10,199,276	159,764	356,349,783	378,692,649	37.13
1954-1955	9,509,699	154,057	329,035,047	351,909,141	37.01

The mean expenditure per vehicle was $3,785.58 during this time period. The range in expenditure per vehicle was from a low of $1,252.43 in North Carolina to a high of $11,236.06 in Rhode Island. Costs on a per vehicle basis do not reflect cost, size, or quality of vehicle. A few states used low-paid student drivers with a rather high overload tolerance for transportation vehicles.

During the 1968-1969 school year, 18,467,944 students were transported in 238,102 vehicles at a cost of $901,353,107. The types of vehicles included 195,119 buses plus 19,250 station wagons, cars, and other means of transportation. There were 166,688 publicly owned vehicles and 74,446 privately owned vehicles. Seventy percent of the 238,102 vehicles were publicly owned.

It should be noted that many states with low expenditure for in-

TABLE 9-6

PERCENT OF PUPILS IN AVERAGE DAILY ATTENDANCE BEING TRANSPORTED, 1968-1969

State	*Average Daily Attendance*	*Number of Transported Pupils*	*Percent Transported*
Alabama	821,000	394,864	48
Alaska	72,136	25,389	35
Arizona	400,951	133,666	33
Arkansas	436,022	222,291	51
California	4,550,000	910,385	20
Colorado	519,650	160,775	31
Connecticut	629,500	NA	
Delaware	123,340	65,956	53
D.C.	147,283	3,700	26
Florida	1,356,920	387,397	29
Georgia	1,090,580	536,626	49
Hawaii	172,633	21,115	12
Idaho	173,120*	86,750	50
Illinois	2,164,275	682,346	32
Indiana	1,237,763	586,614	47
Iowa	652,380	282,288	43
Kansas	532,969*	162,202	30
Kentucky	685,613	397,099	58
Louisiana	857,767	525,700	61
Maine	233,689	139,561	60
Maryland	854,644	382,307	45
Massachusetts	1,095,000	480,000	44
Michigan	2,025,210*	800,000	40
Minnesota	891,500	370,696	42
Mississippi	576,264	313,517	54
Missouri	992,639*	548,689	55
Montana	170,000	44,411	26
Nebraska	327,168	60,053	18
Nevada	117,400	39,156	33
New Hampshire	142,207	79,440	56
New Jersey	1,411,000	535,042	38
New Mexico	270,801	113,330	42
New York	3,465,000	2,164,569	62
North Carolina	1,177,476	610,760	52
North Dakota	146,552	56,807	39
Ohio	2,389,174	1,189,883	50
Oklahoma	586,112	197,306	34
Oregon	459,964	233,222	51
Pennsylvania	2,294,900	1,277,463	56
Rhode Island	171,269	82,622	48
South Carolina	642,353	325,205	51
South Dakota	163,000	41,712	26
Tennessee	877,672	435,559	50
Texas	2,556,150	505,346	20
Utah	300,517	81,567	27
Vermont	98,653	53,408	54
Virginia	1,044,624	598,773	57
Washington	781,651*	350,820	45
West Virginia	403,486	257,999	64
Wisconsin	901,760	486,949	54
Wyoming	85,232	25,608	30
Fifty states and D.C.	44,341,836	18,467,944	42

* Estimated by N.E.F.P. Staff

Source: Average Daily Attendance Information from Research Division-National Education Association. Transportation Figures from National Commission on Safety Education-National Education Association.

TABLE 9-7
STATISTICS ON SCHOOL TRANSPORTATION
1968-1969
(BASED ON REPORTS FROM STATE DEPARTMENTS OF EDUCATION)

State	*Number of enrolled pupils transported at public expense*	*Number of Vehicles Used*					*Expenditure of Public funds for transportation (excluding capital outlay)*	*Expenditure per Vehicle*	*Expenditure per Pupil*
		By Type			*By Ownership*				
		Total	*Buses*	*Station Wagons, cars, other*	*Publicly owned*	*Privately owned*			
TOTAL	18,467,944	238,102	195,119	19,250	166,688	71,446	901,353,107	3,785.58	48.64
Alabama	394,864	5,416	*a* 5,368	48	5,291	125	NA*		
Alaska	25,389	324	310	14	88	236	3,285,362	(140.00)	129.40
Arizona	133,666	1,464	1,399	65	1,366	98	5,336,948	3,645.45	39.92
Arkansas	222,291	3,610	3,531	79	3,456	154	9,984,571	2,765.81	44.91
California	*b* 910,385	11,495	NA	NA	8,549	2,946	*c*68,890,113	5,993.05	75.67
Colorado	160,775	3,085	NA	NA	2,473	612	9,039,203	2,930.05	56.22
Connecticut									
Delaware	65,956	846	826	20	38	808	3,718,771	4,395.71	56.38
D.C.	3,700	90	58	32	55	35	700,000	7,777.78	189.19
Florida	*d* 387,397	4,161	*e* 3,985	176	3,823	338	14,779,398	3,551.88	38.15
Georgia	537,626	5,294	5,213	81	4,911	*f* 383	21,143,345	3,993.83	39.32
Hawaii	21,115	333	236	97	19	314	1,937,000	5,816.81	91.73
Idaho	86,750	1,406	1,376	30	1,074	332	4,838,211	3,441.12	55.77
Illinois	682,346	9,335	8,168	1,367	6,122	3,413	24,564,456	2,631.44	15.72
Indiana	586,614	7,003	6,917	86	3,555	3,448	32,746,748	4,676.10	55.82
Iowa	282,288	6,483	5,990	493	6,244	239	21,311,500	3,287.29	75.49
Kansas	162,202	5,758	4,114	1,644	4,181	1,577	13,119,614	2,278.50	80.88
Kentucky	397,099	5,116	4,732	384	4,182	934	16,695,529	3,263.39	42.04
Louisiana	525,700	6,133	5,935	198	1,898	*g*4,235	30,994,779	5,053.77	58.95
Maine	139,561	1,497	1,407	90	881	616	NA	—	—
Maryland	382,307	4,235	4,075	160	1,802	2,433	22,189,879	5,239.64	58.04
Massachusetts	480,000	5,400	NA	NA	*c* 425	*c*4,975	29,077,178	5,384.66	60.57
Michigan	*c* 800,000	*c*10,125	*c*10,000	*c* 125	*c*10,025	*c* 100	29,000,000	2,864.20	36.25
Minnesota	370,696	6,363	5,815	548	3,485	2,878	28,369,794	4,458.55	76.53
Mississippi	313,517	5,364	5,339	25	5,352	12	11.682,412	2,177.93	37.26
Missouri	548,689	6,834	6,589	245	4,441	2,386	27,397,817	4,009.04	49.93
Montana	44,411	1,125	1,074	51	530	595	4,923,484	4,376.43	110.86
Nebraska	60,053	2,180	1,801	379	1,945	235	6,037,163	2,769.34	100.53
Nevada	39,156	*i 641*	410	231	363	*i* 279	2,222,479	3,467.20	56.76
N. Hampshire	79,440	1,040	853	187	159	881	4,238,503	4,075.48	53.35
New Jersey	535,042	8,171	6,128	2,043	2,542	5,629	36,486,833	4,465.40	68.19
New Mexico	113,330	1,683	1,498	185	209	1,474	*j* 7,605,290	4,518.88	67.11
New York	2,164,569	*k18,659*	14,803	3,856	9,855	8,804	128,390,209	6,880.87	59.31
N. Carolina	610,760	9,275	9,275	0	9,275	0	11,616,273	1,252.43	19.02
N. Dakota	56,807	1,854	1,726	128	1,303	551	3,388,948	1,827.91	59.66
Ohio	1,189,883	14,286	11,292	2,994	13,280	1,006	40,554,889	2,838.78	34.08
Oklahoma	197,306	3,518	3,476	42	3,422	96	11,957,015	3,398.81	60.60
Oregon	233,222	2,888	*l*2,726	162	2,144	582	11,559,018	4,002.43	49.56
Pennsylvania	*c*1,277,463	12,899	11,306	1,593	3,577	9,322	58,313,835	4,520.80	45.65
Rhode Island	82,622	763	639	124	159	604	8,573,116	11,236.06	103.76
S. Carolina	325,205	5,584	5,554	30	5,554	30	7,711,469	1,380.99	23.71
S. Dakota	41,712	1,153	1,055	98	754	399	3,443,749	2,986.78	82.56
Tennessee	435,559	4,847	4,507	340	3,587	1,260	15,284,334	3,153.36	35.09
Texas	505,346	7,880	7,785	95	7,778	102	18,471,425	2,344.09	36.55
Utah	81,567	880	847	33	819	61	3,626,603	4,121.14	44.46
Vermont	53,408	908	738	170	441	467	3,296,820	3,630.86	61.73
Virginia	598,773	6,599	6,587	12	6,554	45	20,589,355	3,120.07	34.38
Washington	350,820	3,953	NA	NA	3,803	150	21,333,069	5,396.68	60.81
W. Virginia	257,999	2,314	2,273	41	2,273	41	13,395,901	5,789.07	51.92
Wisconsin	486,949	7,007	6,558	449	2,047	4,960	38,168,394	5,447.18	78.38
Wyoming	25,608	825	825	NA	579	246	3,196,817	3,874.93	124.83

struction also have a very high cost per pupil transported. Funds being appropriated for transportation may decrease money available for instruction. Many states with the largest percentage of students transported are also the states that support the greater portion of the pupil transportation system with local funds. The problems involved in providing pupil transportation to and from school will be solved to the satisfaction of all groups concerned when, and only when, such services are recognized to be a fundamental part of public school education with each state assuming a major responsibility in financing such a program.

Present Financing

The funds for pupil transportation come generally from local and state funds in approximately the same proportion as for other phases of the public elementary and secondary educational program. Individuality characterizes the states' plans for financing pupil transportation. The problem of determining defensible methods of allocating state funds for pupil transportation to and from school is a difficult one. The 50 states have used many different approaches to the problem. This investigator found very few similarities in programs now being used. A summary of the present financing of pupil transportation is as follows:

1. All but six states have assumed some financial responsibility for pupil transportation at the state level. In some cases, county funds rather than state funds are used to help local districts with their transportation problems. Equal educational opportunity will remain an unattained goal unless all states assume financial responsibility for this important aspect of education.

NA—Not available
a—Includes 362 spares
b—Districts paying all transportation costs (no state reimbursement) transport an estimated 100,000 pupils
c—Estimated figure
d—K-12
e—Includes 456 spare buses
f—Includes 82 jointly owned buses and 81 station wagons and cars
g—71 jointly owned
h—7 not reported
i—Includes 231 parental vehicles
j—Including capital outlay
k—Excludes public (common) carriers
l—Ownership on 162 cars and station wagons not available

(Discrepancies in the figures for some states are due to variations in record-keeping systems) *Source:* Prepared by National Commission on Safety Education, National Education Association.

2. Of the 44 states which provide funds for pupil transportation, only 18 include their allocations as a part of their state foundation programs. Therefore, several states are aiding more wealthy districts disproportionately more than they are aiding less wealthy ones. When consideration is given to the defensible principles and practices which have come to school finance as a result of wide application and constant improvement of the equalization concept, there is little justification for such a condition existing.

3. Many, if not most, of the formulae used to allocate state funds for transportation are unduly complicated and difficult to interpret. This gives a strong indication of the need for reduction in the number and kinds of school districts in some states. Obviously, it is far easier to devise a simple formula for a state with relatively few districts in a small number of classifications than to devise one for a state with many districts in many categories. Overlapping districts and abnormally small or large districts make for law and formulae which are overly complex.

4. Fifteen states make flat grants to districts for approved expenditures for pupil transportation. Since flat grants negate equalization, they tend to defeat one of the goals of equalization — improvement of the level of equality of educational opportunity within a state.

5. Twelve states pay 100 percent of the cost of approved expenditures for pupil transportation. This, of course, does little to encourage efficiency of operation on the part of the local district. Under these circumstances, the state must devise other ways and means of stimulating efficiency in the operation of the program. There is much to be said in favor of requiring at least a minimum effort at the local level for any state-supported program in education.

6. Formulae are provided in 28 states to compute allowable expenses for reimbursement. Most of these formulae include the number of pupils transported; 17 include the bus miles traveled; seven consider the number of buses being used. Although a formula need not be particularly complex, it should include other variables such as density, utilization, and cost of buses.

7. Although seven states still make additional allowances for adverse road conditions, most have reached the point where this

allowance is no longer necessary. It has been recognized that with the improvement in roads and equipment this factor is no longer of major importance.

8. The use of a density factor is becoming more common, especially in states which have recently improved their formulae. The use of area density of pupils to be transported has given way in some states to density as determined by the number of pupils to be transported per mile of bus travel. This is particularly true where the pupil population is concentrated along principal roads rather than being somewhat evenly distributed through the area to be serviced. Density factors are usually computed by one of two methods: (1) the number of students transported divided by the number of square miles in the district, or (2) the number of students transported by the number of bus miles traveled to and from school each day.

9. Forty states provide stipulations of required distances for eligibility for pupil transportation, varying from one to three miles as a minimum. The typical requirement is one and one-half miles for elementary pupils and two miles for high school. Distances are usually measured by the shortest traveled route between the home and the school.

10. States are beginning to provide state-supported transportation services for handicapped children at any distance from school.

11. Minimum distance requirements are being waived in some states when pupils are required to travel on dangerous highways or roads. Typically, decisions regarding the degree of danger and the responsibility of the state to provide transportation services are made by the state board of education.

12. Twenty-eight states now participate to some degree in the purchase of public school buses. This practice varies from complete payment at the time of purchase to depreciation payments allocated over periods of time ranging from four to ten years.

13. The trend toward district or state ownership of school buses, as compared to contracts with private owners, is continuing. The advantages involved in fewer taxes to be paid, more control of services rendered, and greater efficiency in operation continue to be evident.

14. In general, more than half the funds for pupil transportation come from the local school administrative unit, which may range in size from the small rural district operating only a one-room elementary school — or possibly not even operating a school — to very large units made up of one or more counties or parts of counties.

15. Some states, however, have a provision for voting a special tax levy which may be used only for transportation. It is somewhat difficult to determine the reason these states considered a special levy necessary; its purpose may have been to avoid any legal ceiling which may have been placed on the general purpose school tax.[12]

Criteria for Evaluating Formulae for Distributing State Aid for Pupil Transportation

For more than half a century, some states have been experimenting with various formulae for determining their share in financing pupil transportation. Through this procedure, some criteria have evolved relating to methods of state financing of pupil transportation. Many of these criteria are simplistic in nature but, nevertheless, are necessary for a transportation system to function efficiently.

A basic criterion is that any state formula for determining the transportation burden of a local school unit must take into account the factors which can cause a considerable variation in the justifiable cost of the service. For example, some of the early plans centered on the percentage of the school's population that came from a rural setting. Suburban development, as well as other factors, has caused this gross factor to be discarded from state pupil transportation formulae. Some states have modified the above formula by including density of transported population, road conditions, and wage level of the area in which the transportation program is operated. Several states have used only one of these three factors — the density of transported population — in their aid formulae. This ignores differing labor costs and road conditions between different areas of the state.

A second criterion evolves from the need for simplicity in the pupil transporation formula. Simplicity may be necessitated by the present level of accounting sophistication exhibited by many local school systems and state departments of education. The formual should allow for any varying costs between districts, providing these costs can be accurately determined. A formula which does not accurately measure the influence of factors which affect the cost of transportation will not be a good one, regardless of the inherent complexity. Some states have avoided the simplistic vs. complex syndrome by paying the actual costs of transportation with ceilings on certain components. This may be one alternative to treating all units equally, but some of the plans are complex and require a relatively large clerical staff for the state's pupil transportation division.

A third criterion is that the factors in the state transportation formula should be of such a nature that they cannot be controlled or manipulated by a local school transportation supervisor. If the state uses such factors as number of buses, the number of bus or pupil miles traveled, or number of pupils transported, the state must exercise sufficient authority through standards, supervision, and auditing to prevent abuses. State control and supervision should be held to a minimum consistent with the objective that funds will be effectively and economically utilized for their intended purposes.

Another criterion concerns the computing of allocations on past experience. One might hypothesize what certain elements of the transportation program should cost; for example, what a reasonable salary is for a school bus driver. But the weakness in basing a formula on past experience is that much of this experience may have been based on inefficient operations, and costs based on these experiences would be unnecessarily inflated. If a state uses averages for determining the prevailing conditions, then the inefficient will be penalized, and this should encourage them to strive for greater efficiency. If this causes a reduction in inefficiency in local transportation programs, average costs will go down, and the experience bases for deriving a state formula will become more sound.

An additional criterion is the need for a state transportation program to be as objective as possible. Still, subjective decisions will be needed. Such decisions at both the local and state level should be handled within broad policy guidelines in order to avoid decisions which reflect values of the individual and therefore vacillate as personnel changes are made at the local and state level.

Without doubt, methods of financing pupil transportation systems will receive increasing attention during the next decade. Rapid growth of pupil transportation service indicates that an increasing portion of the school dollar will be required to finance the above mentioned service. Concurrently, there will undoubtedly be a greater incentive for assuring that we have enough money for adequate and safe service but that we allow little leeway for extravagance or inefficiency. Furthermore, as methods of measuring needs for financing various aspects of education are refined, every state will want to take advantage of more effective methods of using its funds for education. Public pressure will require that full value is received for every dollar allocated to education and related services.

FUTURE STATUS OF PUPIL TRANSPORTATION

The next decade will bring many changes in pupil transportation. It is becoming, and will remain, one of the major services of the public schools. There are several reasons, based on current trends, for believing that the growth of transportation may continue for many years to be disproportionately higher than the growth in pupil enrollment.

Variables Which May Influence Future Needs

The evolution of the concept of "busing" as a technique for increasing equal educational opportunity for black or other minority youth is rapidly receiving acceptance. This does not imply universal acceptance but it is being considered as one alternative for breaking up large concentrations of minority groups and mixing them proportionately with other ethnic groups — primarily white middle-class populations. The courts as well as federal, state, and local political leaders have shown ambivalency in regard to this alternative. Because of this vacillation, it is difficult to predict the weight of this concept in relation to future pupil transportation needs.

Related to the above is the trend toward transporting children in urban centers. Pupil transportation is increasing in the cities. While it is believed that the percentage of pupils transported will never be as high in urban areas as in rural areas, nevertheless, the trend is away from transporting only special groups, to a more general transportation of all groups of pupils. Some states have only recently authorized pupil transportation at public expense within cities. Recent breakthroughs in "rapid transit system" technology may have an influence upon this trend in the future.

Future consolidation and reorganization of school districts will have a decided impact upon pupil transportation. In a large number of states there are still many small inefficient school districts and many hundreds of one to four teacher schools. Several of these states have recently enacted legislation authorizing, and in some cases mandating, the elimination of small districts with inadequate educational programs. The movement toward consolidating and reorganizing attendance areas will continue. Since these changes are being accompanied by vast improvements in the road system, an ever-increasing demand for pupil transportation may be expected.

Due to the increased emphasis upon safety, many states are liberalizing rules concerning who may be transported. Walking distances of one and one-half to two miles are being ignored when students must walk along busy highways or in close proximity to other hazardous conditions.

Transportation supervisors at both the state and local level are becoming specialists in their fields. Some universities are preparing educational specialists with emphasis in the area of transportation. Because of the shortage of prepared people, some school systems are employing business college transportation majors or persons experienced with large interstate transportation "fleets" to direct the schools' transportation systems.

The trend for several states to pass legislation requiring transportation of non-public school pupils will have a decided effect upon future pupil transportation projections. If this trend continues, it will contribute an additional load to the future transportation system.

Future Supreme Court decisions in the area of school desegregation could have major implications for pupil transportation. Because of the multiplicity of directions of such decisions, no attempt will be made to foresee the impact of such decisions upon pupil transportation.

Instructional usage of school buses is increasing very rapidly, especially in working with the culturally disadvantaged. Many states are developing statewide criteria for instructional bus trips and are recommending systematic procedures for controlling these uses. Time spent traveling "to and from school" may be utilized for instructional purposes if the rapid advance in educational technology continues.

In many states, local school units have not been able to provide the necessary transportation; and in many cases large groups entitled to transportation, according to generally accepted transportation standards, have not been served. Recent recognition, by many states, of transportation as an integral part of the foundation program has helped underwrite the true costs of transportation. Several recent state plans have attempted to isolate more carefully those factors closely related to variations in the cost of transportation and to measure more accurately the degree to which they do affect cost. These improvements should also simplify these formulae, making them easier to understand and to compute.

There are many other factors that can influence transportation either directly or indirectly. As implications of the National Educational Finance Project are put into practice, they also will have a profound effect upon pupil transportation.

Projected Pupil Transportation Needs for 1980

No increase is anticipated during the decade in the number of children of school age 5-17. Decreases are anticipated in the number of children of ages 5-13, but corresponding increases in the 14-17 age group are predicted. The projections prepared by the writer and shown in Table 9-8 were based on composites of the Series B and D population projections reported by the Bureau of the Census, Series P. 25, No. 418, March 14, 1969.[13] These data are consistent with the Series C projections, which assume a fertility rate approximating that of the mid 1960's. Although the number of school-age children will remain stable during the decade, the number in individual states will

TABLE 9-8

PUPIL TRANSPORTATION PROJECTIONS
FOR THE UNITED STATES 1970 THROUGH 1980

Year	*Estimated Population Ages 5-17* [a]	*Estimated Pupil Transportation Based Upon 1970-1980 Population Estimates* [b]
1970	53,036,000	16,349,000
1971	52,893,000	16,306,000
1972	53,369,000	16,452,000
1973	53,355,000	16,448,000
1974	53,287,000	16,427,000
1975	53,145,000	16,383,000
1976	52,999,000	16,338,000
1977	52,894,000	16,305,000
1978	52,818,000	16,282,000
1979	52,862,000	16,296,000
1980	52,899,000	16,307,000

[a] *Source:* Bureau of the Census, *Current Population Reports.* Series P. 25, No. 418, Washington, D. C., March 14, 1969.

[b] (Assuming the same mean percentage of pupils age 5-17 will ride 1970-1980 as rode 1960-1970)

show variations ranging from substantial increases to significant decreases as a result of migration patterns, economic growth, and varied fertility rates.

Table 9-9 shows pupil transportation projections based upon a straight line projection of those pupils transported in 1960-1970. This will be the "high" projection and the previously discussed projections will be the "low" projection. Reasons for the projected "high" increases were discussed in a previous section of this chapter. One should be cautioned that projections are based on continuing growth patterns and that any changes in these patterns will commensurately affect the projections.

TABLE 9-9

PUPIL TRANSPORTATION PROJECTIONS
FOR THE UNITED STATES 1970 THROUGH 1980

Year	*Number of Pupils Transported*	*Estimated Number of Pupils to be Transported (Assuming Straight Line Projection)*
1960	12,700,989	
1961	13,106,779	
1962	13,687,547	
1963	14,247,753	
1964	15,559,524	
1965	15,413,000	
1966	16,423,396	
1967	16,684,922	
1968	17,271,718	
1969	18,467,944	
1970		19,262,000
1971		20,090,000
1972		20,954,000
1973		21,855,000
1974		22,795,000
1975		23,775,000
1976		24,973,000
1977		26,047,000
1978		27,167,000
1979		28,335,000
1980		29,574,000

Possible Pupil Transportation Financing for 1980

In attempting to project possible pupil transportation cost for 1980 one must consider many factors. If recommendations from other studies of the National Educational Finance Project are implemented they could have tremendous influence upon the 1980 cost of education. Present inflationary trends, if continued, can have major impact upon future costs of transportation. Table 9-10 shows a straight line projection of possible transportation costs to 1980. At best, these are very crude estimates and should be readjusted as fiscal conditions change. Based upon Bureau of Census figures and a three percent annual increase in cost of transporting pupils, an allocation of $1,101,538,000 will be required by 1980. However, if pupil population trends for 1960-1970 continue through 1980, and allowing a three percent annual increase in cost of transporting pupils, an allocation of $1,997,724,000 will be required by 1980. Major changes in transportation patterns or significant changes in pupil transportation could throw these projections awry.

TABLE 9-10
PROJECTED PUPIL TRANSPORTATION COSTS,
1970 THROUGH 1980 (EXCLUDING CAPITAL OUTLAY)

Year	*Transportation Costs based Upon Population Projections*	*Transportation Costs Based Upon 1960-1970 Transportation Growth*
1970	$ 821,864,000	$ 968,300,700
1971	844,325,000	1,040,260,000
1972	877,385,000	1,117,477,000
1973	903,449,000	1,200,495,000
1974	929,440,000	1,289,741,000
1975	954,801,000	1,385,607,000
1976	980,607,000	1,498,879,000
1977	1,007,975,000	1,610,226,000
1978	1,036,749,000	1,729,723,000
1979	1,068,692,000	1,858,209,000
1980	1,101,538,000	1,997,724,000

Alternative Fiscal Models for Allocating State Funds for Pupil Transportation

Many fiscal models have evolved for the allocating of funds by the three levels of government for public school purposes. Many of these models are based upon the Strayer-Haig theory of uniform local effort, the Updegraff theory of financial incentives for increasing local financial effort, and the Morrison theory of total state support. Other school finance authorities may be credited with many modifications of these basic theories.

Present fiscal models have generally provided for cooperative state and local financing, but may be expanded readily to include Federal financing. These models may be modified to include financing from regions or metropolitan areas in conjunction with or in lieu of local financing.

In suggesting the following alternative models for financing pupil transportation, no effort was made to exhaust the full range of possibilities. The goal was to identify a selected number of models which were theoretically sound and that could provide a range of possible choices for consideration by interested parties. Although these models are being presented in isolation, the preferred model should be made an integral part of a total foundation program.

Model 1 — No State Aid for Transportation

This model discriminates against districts which have a scattered population. Such districts must transport children to school in order to organize schools of sufficient size to be efficient. This is an extra cost and would have to be provided for, either by the district or the parents who transport their own children to school. This model retards the consolidation of schools, penalizes the district which has significant needs for pupil transportation, and retards equalization of educational opportunity.

Model 2 — A State Flat Grant Per Pupil Transported Regardless of the Various Conditions in the District

This model is an improvement over Model 1, depending of course, upon how near the flat amount approaches the average cost of transportation in the state. But since the necessary costs of transportation per pupil vary, at least 3 to 1 in a typical state, this model discriminates against the district that has necessary high per pupil cost and gives an unnecessary bonus to the district with a low per pupil cost. This model has two variations as follows:

a. The State pays all of the flat amount guaranteed.

b. The state and local districts in proportion to their financial ability share in providing for the flat amount guaranteed. This alternative is more equitable than "a" above because it tends to equalize the burden of school support.

Model 3 — Full Recognition of the Varying Costs of Transportation Beyond the Control of the Local Board of Education, Such as Density, Variations in Wage Levels, and Related Items

This model is a major improvement over Model 2. However, this model, in order to be fully equitable, calls for adequate provision in the state formula for the full necessary costs of pupil transportation as determined by an equitable formula which estimates, with reasonable accuracy, what the cost of transportation should be in a district with a given set of conditions. This model has two variations as follows:

a. The cost of providing transportation is included in the foundation program, and the costs are shared by the state and the local units in proportion to their respective abilities according to some type of equalization formula.

b. The state pays the entire cost of transportation.

Either of these formulae eliminates the inequalities among districts due to variations in the percentage of the pupil population transported and variations in the costs per pupil. They tend to equalize educational opportunity and place all districts on the same financial basis for meeting the need for pupil transportation.

If Model 3 does not provide for the full necessary costs of transportation, it is inequitable to the extent that it does not provide for the full cost.

Model 3 tends to encourage districts to administer their transportation programs efficiently because, under this formula, a district receives only the computed necessary costs for pupil transportation. If it administers its transportation program extravagantly or inefficiently, it must pay for those costs from local funds. On the other hand, if a district manages its transportation system so efficiently that it spends less than an amount allotted, it can use those funds for other purposes. However, in order to prevent a district from attaining low costs by overcrowding buses and otherwise providing dangerous or inferior transportation services, the state would have to establish and enforce minimum standards protecting pupil safety and comfort. This model also tends to encourage local initiative because it places the responsibility for the administering of transportation on the local superintendent and his board of education.

Model 4 — State Ownership and Operation of the Transportation System

This model provides the same advantages as Model 3 with respect to equalizing among districts the cost of transportation due to percentage of students transported and varying per pupil cost. This model also provides the same standard of service throughout the state. It may be the cheapest method of providing a given quality level of pupil transportation service. The disadvantage of this model is that it removes the decision-making on transportation from the local level and places it at the state level. Since decision-making on school transportation is closely related to policies with respect to school consolidation and the use of buses for instruction purposes, this may be an important disadvantage.

This model also involves the creation of a state bureaucracy of considerable size.

Model 5 — State Payment of the Entire Approved Cost of Transportation

Under this model the state approves bus routes, bus purchases, salaries of drivers, salaries of mechanics, and other transportation costs. These are then incorporated into the state support program. As in Model 3, the state could either pay the entire costs from state funds or share the costs with local districts in accordance with some type of equalization formula which takes into consideration variations in taxpaying ability in local school units. This model has most of the same advantages as Model 3 with respect to equalizing among districts the varying financial burdens for school transportation. It has the disadvantages of removing much of the decision-making on school transportation from the local level to the state level. Under this system, the local superintendent and board of education are responsible for operating the transportation system but they must secure approval from the state level of all decisions involving money if they secure financial reimbursement. This involves a great deal of red tape and will undoubtedly create a state bureaucracy of considerable size.

Model 6 — State Payment of a Fixed Percentage (e.g., 75 percent) of Pupil Transportation Costs

The theory back of this model is that if each district has to pay a considerable percentage, such as 25 percent, of the costs of transportation it would have an incentive to operate its transportation system efficiently and economically. It is also assumed under this model that the state would not have to supervise rigorously or approve all expenditures for pupil transportation. This model does place decision-making on pupil transporation at the local level and, to that extent, is an improvement over Model. 5. However, whatever percentage of the costs of transportation a district must bear itself is unequalized under this formula. That is, if the state required each district to provide 25 percent of the costs of transportation, obviously 25 percent of the costs of transporation would be as inequitably financed as under Model. 1.

Under this model, the state could either pay the entire costs of whatever percentage of the costs it assumes, or it could share this cost with local districts under some type of equalization formula.

There are two variations of Models 2, 3, 5, and 6 as follows: (a) the state aid for transportation is provided through a special earmarked appropriation; (b) the state aid for transportation is provided as a part of its integrated foundation program. This latter alternative is considered more desirable because budgetary planning is made more difficult when based on a series of categorized grants.

Criteria for the establishment of state-local partnership for financing pupil transportation have been established in some states. The following list of criteria, developed by the staff of the Division of Transportation of the New Mexico State Department of Education, is an example of some of the excellent work now being done in this area of educational service.

Any state plan for financing pupil transportation should:

1. Provide sufficient state funds to enable the local unit, with reasonable local effort, to operate safe, economical, efficient, sound, and practical system of transportation for all pupils who should be transported.

2. Tend to compensate for the additional burden that falls upon school districts which must provide pupil transportation. (Many school districts cannot assume additional costs from local sources.)

3. Take into account provisions for capital outlay expenditure, such as purchase of school buses, school bus equipment, and safety equipment.

4. Provide for the amortization of capital outlay expenditures for school buses and equipment that meet state specifications, beyond the current year. (Preferably a four year period.)

5. Tend to stimulate the attainment of desirable standards for school bus equipment, maintenance and operation, and the employment of qualified personnel.

6. Permit at the local level, ready flexibility in making adjustments in the transportation program, such as in cases of emergency increases in number of pupils, reorganization, or consolidation of schools, which require in most instances additional transportation.

7. Require the local school districts or local administrative units to maintain adequate accounting records and reports.

8. Provide for consideration of factors beyond the control of local units, such as population density, road conditions, and geographical barriers.

9. Not tend to discourage desirable reorganization of local units and attendance areas.

10. Provide for distribution of all state monies for transportation on an objective formula:

Capital Outlay
Maintenance and Operation
Driver's Salaries

11. Encourage schools to broaden and extend the school program through the use of school buses, be they school owned or contract buses.

12. Provide for subsistence for pupils in lieu of transportation, within reasonable limitations.[14]

The problems involved in solving pupil transportation to and from school will be remedied to the satisfaction of all groups when, and only when, such services are recognized as a fundamental part of public school education with each state assuming a major responsibility in financing such a program. States can no longer avoid solving this problem in finance, for pupil transportation is as much a responsibility of each state as is any other part of the finance program. Fortunately, more of the states are accepting their responsibility in this matter, as evidenced by strong programs now in operation.

FOOTNOTES

1. Commonwealth of Massachusetts, *Acts and Resolves,* 1869, Chapter XCXXII, Sec. 1.

2. Roe Lyell Johns, *State and Local Administration of School Transportation,* Contributions to Education No. 330, New York: Teachers College, Columbia University, 1928, p. 2.

3. Vermont, *Acts and Resolves,* 1876, Act. No. XLV, Sec. 1.

4. Maine, *Acts and Resolves,* 1880, Chapter CLXXXI, Sec. 1.

5. J. F. Abel, "Consolidation of Schools and Transportation of Pupils," *Bureau of Education Bulletin,* No. 41, Washington, D. C.: Government Printing Office, 1923, pp. 16-17.

6. John C. Muerman, "Transportation of Pupils at Public Expense," *Bureau of Education,* Rural School Leafllet, No. 2, Washington, D. C.: Government Printing Office, April, 1922, p. 1.

7. J. F. Abel, "Consolidation of Schools and Transportation of Pupils," *Bureau of Education Bulletin,* No. 41, Washington, D.C.: Government Printing Office, 1923, p. 22; Laws of the Territory of Hawaii, 1919, Act, CXXVI; Territory of Alaska, *Session Laws, Resolutions and Memorials,* 1933, Chapter XLII, Sec. 7 (h).

8. "Consolidation of Schools and Transportation of Pupils at Public Expense in Massachusetts," *Bulletin of the Department of Education of Massachusetts,* No. 6, (1920), p. 8.

9. *Ibid.*

10. J. F. Abel, p. 18.

11. E. G. Featherston and D. P. Culp, *Pupil Transportation State and Local Programs,* New York: Harper & Row, 1965, pp. 30-32.

12. Derived from Office of Education, *Public School Finance Programs,* 1968-69 (compiled by Thomas L. Johns) and *A Study of Equalization Practices In Financing Pupil Transportation,* 1964-65 (compiled by Percy E. Burrup and Norris Anderson.)

13. Bureau of the Census, *Current Population Reports,* Series P. 25, No. 418, Washington, D. C., March 14, 1969.

14. "Proposal for Financing School Transportation in New Mexico," Prepared by Staff of Division of Transportation, Department of Education, State of New Mexico, 1964.

CHAPTER 10

*Fiscal Capacity and Educational Finance**

RICHARD A. ROSSMILLER

One time-honored criterion which has been applied in evaluating the methods used by a government to allocate among its citizens the burden of meeting the government's financial needs is that of equity or fairness. The first canon of taxation mentioned by Adam Smith in 1776 in his *Wealth of Nations* was that taxes should be equal or equitable. Smith's early concern for equity is shared by modern writers, who also have stressed the importance of equity or fairness as a principle of taxation.[1]

While there is virtually universal agreement that the costs of government should be distributed equitably among taxpayers, the question of what constitutes equitable treatment is far from resolved, as is the question of what criteria and procedures should be employed to assess equity. As Eckstein has noted, "What we mean by a fair tax system is not a question of technical economics but of personal philosophy."[2] A vast volume of literature has developed with regard to the notion that equity is best served when taxes are apportioned according to two principles: (1) an individual's ability to pay and (2) the benefits received by an individual from governmental services. Unfortunately, with regard to benefits received there is no way in which the beneficiaries can clearly be identified in the case of many public services—for example, national defense or education—and even in some cases where the beneficiaries can be identified, application of this principle would not be feasible—for example, children in an orphanage. With regard to ability to pay, the question of what constitutes acceptable evidence of ability to pay is still debated; and the question of whether ability to pay rises proportionately with income remains unresolved.[3] Also worth noting is the fact that equity must be viewed not merely in terms of the taxes paid directly by the individual; it must be viewed in terms of the ultimate distribution of the burden among various persons in society, i.e., the incidence of the tax.[4]

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* This chapter abstracts and summarizes the research reported in Richard A. Rossmiller, James A. Hale, and Lloyd E. Frohreich, *Fiscal Capacity and Educational Finance: Variations Among States, School Districts, and Municipalities.* Madison, Wis.: Department of Educational Administration, University of Wisconsin, 1970.

The problem of achieving equity in taxation is especially difficult in a federal system of government. Buchanan has observed that "a distinct group of problems immanently arises when a single political unit possessing financial authority in its own right contains within its geographical limits smaller political units also possessing financial authority."[5] When two or more constitutionally independent fiscal systems operate upon the resources of a single taxpayer, as is the case in the United States, equity or fairness is dependent on the total impact of all taxes, not just those levied by a single taxing jurisdiction. Thus, when one examines the fiscal capacity of a local unit of government such as a school district, one must bear in mind that he is viewing only a portion of the taxation picture.

The importance of striving for equity in apportioning the burden of supporting education (school taxes) has long been recognized by writers in the field of school finance. Cubberley cited examples of extreme inequalities in the fiscal capacity of local school districts and concluded that "any attempt at the equalization of the opportunities for education, much less any attempt at equalizing burdens, is clearly impossible under a system of exclusively local taxation."[6] Strayer and Haig made explicit provision for equalizing the burden of educational support in their recommendations for what has come to be known as the "foundation program" when they stated that if equalization of educational opportunity and equalization of school support were to be achieved, it would be necessary "(1) . . . to furnish the children in every locality within the state with equal educational opportunities up to some prescribed maximum; (2) to raise the funds necessary for this purpose by local or state taxation adjusted in such manner as to bear upon the people in all localities at the same rate in relation to their tax-paying ability . . ."[7]

More recently, authorities in the field of educational finance have recognized that since school districts utilize essentially the same tax base as other local units of government, the property tax, it is important to consider the total tax levy, not just the tax levy for school purposes, when considering the extent to which equity is achieved in various programs for financing education.[8] Attention also has been called in recent years to the increasing fiscal demands and declining tax bases of the central cities in metropolitan areas.[9] At the same time, however, concern has been expressed for the fiscal problems and difficulties encountered by municipalities and school districts which serve sparsely populated and/or impoverished rural areas.

If reasonable equity in taxation for the support of public education is to be attained, however, it is imperative that the common fiscal characteristics of various types of school districts be compared and contrasted to identify similarities and differences. And since the bulk of local revenue for the support of education is obtained from a tax base which supports many other public services, it is important to consider the total burden on that tax base if equity among the state's taxpayers is to be attained. Without such data, it is virtually impossible to devise support systems for education which will provide reasonable equality of educational opportunity and, at the same time, afford reasonable equity in the treatment of taxpayers. Although special pleadings have been made for certain types of school districts (particularly those serving urban and rural ghettoes), relatively little is known concerning similarities and differences in the fiscal capacity and public service demands which are associated with the areas served by various types of school districts.

This study was designed to accomplish three objectives:

1. To identify and summarize the most recent available data concerning the relative fiscal capacity and tax effort of the 50 states.

2. To identify variations in relative fiscal capacity and tax effort among school districts serving areas which display varying economic and/or demographic characteristics when alternative measures of fiscal capacity are employed.

3. To determine the effect on relative fiscal capacity and tax effort among school districts serving areas which display varying economic and/or demographic characteristics when expenditures for public services by local units of government are considered.

DESIGN OF THE STUDY

The design phase of this study was particularly crucial, since it was the intent of the researchers to design the study in such a way as to permit generalizing from the findings with regard to the revenue patterns, expenditure patterns, and fiscal capacity of various types of school districts in the United States and the municipalities with which they are associated. It was desired that the sample be broadly representative of all states and that, within each state, the school districts selected for the sample be broadly representative of school districts in that state. This required that a two-stage sampling procedure be employed. The first stage involved selection of a sample of states; the second involved selection of a sample of school districts from among all school districts in each state.

Ideally, the sample would have included all 50 states. Within the constraints imposed by the time and resources available, however, it was necessary to concentrate on a sample consisting of eight states. The eight states were selected to obtain wide geographic dispersion and, if possible, to include at least one state in each quintile (by rank) on distributions based on per capita income, income per person age 5-17, net effective buying income per household, state-local tax collections as percentage of personal income, population per square mile, number of operating school administrative units, total population, and percent of population urban. After considering several possible combinations, a sample consisting of the following states was decided upon: Florida, Kentucky, New York, North Dakota, Oregon, Texas, Utah, and Wisconsin. The distribution of states by quintile rank on selected variables is shown in Table 10-1.

The first step in selecting the sample of school districts was the development of a rationale for classifying them. Only school districts providing either K-12 or 1-12 educational programs and which enrolled 1,500 or more pupils during the 1967-68 school year were eligible for inclusion in the sample. A taxonomy of school districts was developed based primarily on the knowledge and insights gained from previous research but tempered by knowledge of the extent to which data, particularly with regard to local non-school expenditures, could be obtained. The taxonomy, which consisted of seven mutally exclusive categories of school districts defined according to the type of area served by the school district, was as follows:

A. *Major urban core city*—school district serving a city located in a standard metropolitan statistical area (SMSA), named in the

TABLE 10-1

Distribution By Quintile Rank On Selected Variable Of The Eight States Included In The Sample

Quintile Rank	*Per Capita Personal Income, 1967*	*Personal Income Per Person Age 5-17, 1967*	*Net Effective Buying Income Per Household, 1967*	*State, Local Tax Collection as Per Cent of Personal Income, 1967*	*Population Per Square Mile, 1967*	*No. of Operating Administrative Units, 1967-68*	*Total Population, 1967 (in Millions)*	*Per Cent of Population Urban, 12-31-67*	*City with 250,000 or More in 1960*	*Geographic Region*
1-10	N.Y. (2)	N.Y. (1)	N.Y. (9)	N.Y. (2) Wis. (8)	N.Y. (5)	Fla. (10) Utah (5)	N.Y. (2) Fla. (9) Tex. (8)	N.Y. (4) Utah (10)	N.Y. Fla. Wis. Ky. Tex. Ore.	East South East North Central Central Plains Southwest Mountain Pacific
11-20	Wis. (18)	Ore. (17)	Wis. (19) Utah (27)	N.D. (15) Utah (12) Ore. (21)	Fla. (16)	Ky. (24)	Wis. (16)	Fla. (12)		
21-30	Fla. (28) Ore. (23)	Fla. (25) Wis. (24)	N.D. (29) Ore. (30)	Fla. (26)	Wis. (22) Ky. (21)	Wis. (36) Ore. (31)	Ky. (22) Ore. (30)	Wis. (27) Ore. (23)		
31-40	N.D. (40) Tex. (32) Utah (36)	Ky. (39) Tex. (31)	Tex. (33)	Ky. (37)	Tex. (33) Ore. (38)	N.D. (34)	Utah (36)			
41-50	Ky. (44)	N.D. (43) Utah (44)	Fla. (44) Ky. (42)	Tex. (47)	N.D. (43) Utah (42)	N.Y. (43) Tex. (48)	N.D. (45)	Ky. (41) N.D. (50)		

title of the SMSA, and having a population of 250,000 or more persons in 1960.

B. *Minor urban core city*—school district serving a city located in a SMSA, named in the title of the SMSA, and having a population of less than 250,000 persons in 1960.

C. *Independent city*—school district serving a city not located in a SMSA and having a population of 25,000 or more persons in 1960.

D. *Established suburb*—school district serving a city or village located in a SMSA, which is not one of the core cities, and which has experienced a school enrollment increase averaging less than five percent annually over the most recent five to seven year period for which data are available.

E. *Developing suburb*—school district serving a city or village located in a SMSA, which is not one of the core cities, and which has experienced a school enrollment increase of at least five percent annually over the most recent five to seven year period for which data are available.

F. *Small city*—school district serving a city, village, or other incorporated municipality not located in a SMSA and having a population of 10,000-24,999 persons in 1960.

G. *Small town or agriculture service center*—school district serving an area not located in a SMSA in which the largest populated place had a population of less than 10,000 persons in 1960.

A listing of all school districts in each of the eight sample states, the membership or enrollment in each district for the 1967-68 school year, and the grade span served by the district was obtained from the *Education Directory*[10] published annually by the U.S. Office of Education. To identify school districts which were located within a SMSA, a listing of standard metropolitan statistical areas identified by the Bureau of Census was consulted.[11] To determine whether a school district should be categorized as an established suburb or a developing suburb, the *Education Directory*[12] for 1962-63 was obtained and the percentage of enrollment increase between the 1962-63 and 1967-68 school years in each suburban district was computed. In the event of missing data, correspondence with state education department officials and/or state education department publications were utilized to secure the necessary data. In states where local school districts are organized on a county unit basis, the population of the largest city in the school district was used to determine the appropriate school district category.

A proportional random sample of 35 school districts was drawn independently for each of the seven categories with the exception of Category A, where the total sample of 13 school districts constituted the sample for the category. The categorization of school districts in each state produced the distribution shown in Table 10-2, which also shows the distribution of the sample by states and by categories.

Twenty-three items of data concerning sources of revenue, purposes of expenditure, and measures of fiscal capacity were collected for each school district in the sample for the 1961-62 and 1966-67 school years. All school district data were obtained from official school district reports on file in the respective state departments of education and/or from reports and publications of the state department of education.

Thirty items of data regarding revenues and expenditure were obtained from the 1962 and 1967 *Census of Governments* for the largest municipality (city, village or township) with which each school district in the sample was associated and for each county in which a school district included in the sample was located. Data were taken directly from the *Census of Governments* and from *Sales Management's* "Survey of Buying Power".

Data concerning municipal receipts and expenditures contained in the *Census of Governments* are reported to the nearest thousand dollars. These data were converted to a per capita basis by dividing the total revenue from each source and the expenditure for each function by the estimated population of the municipality obtained from *Sales Management*. A similar procedure was followed to convert data to a per household basis.

All data concerning receipts and expenditures of school districts were rounded to the nearest hundred dollars. Data concerning the market value of property in school districts were rounded to the nearest thousand dollars. The data were converted to a per pupil in average daily membership basis by dividing the revenue from each source and the expenditure for each function by the district's average daily membership for the appropriate school year.

It also was necessary to convert school district revenues and expenditures to a per capita basis to compare the categories on

TABLE 10-2

CATEGORIZATION OF SCHOOL DISTRICTS IN THE EIGHT SAMPLE STATES AND DISTRIBUTION OF THE SAMPLE OF SCHOOL DISTRICTS BY STATE AND BY CATEGORY

	Category							
State	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*Total*
Florida*	2 2	4 7	6 7	0 0	0 0	3 8	3 32	18 56
Kentucky*	1 1	2 4	4 4	0 4	0 1	3 7	6 61	16 82
New York	3 3	6 9	8 9	20 139	20 95	7 18	10 100	74 373
North Dakota	0 0	1 1	3 3	0 0	0 1	1 3	1 5	6 13
Oregon	1 1	1 2	0 0	2 11	1 4	3 8	3 28	11 54
Texas	5 5	16 26	5 6	9 63	10 44	13 34	7 70	65 248
Utah*	0 0	2 3	0 0	0 3	1 4	1 2	1 14	5 26
Wisconsin	1 1	3 5	9 10	4 17	3 13	4 12	4 38	28 96
Number in sample TOTAL	13 13	35 57	35 39	35 237	35 162	35 92	35 348	223 948

*County unit districts categorized on the basis of the population of the largest city in the school district.

revenues by source and expenditures by function for school districts and municipalities combined. Since population estimates were not available for school districts, a formula for approximating the population of a school district based on the average daily membership of pupils in that district had to be devised. It was found that accurate population estimates were available for all Wisconsin school districts for 1966.[13] Consequently, the ratio of average daily membership to total population in the Wisconsin school districts which corresponded to each of the seven categories were used to estimate the population of each school district.

In addition to computing the usual descriptive statistics such as means and standard deviations, two multivariate statistical procedures—factor analysis and multivariate analysis of variance—were employed in the analysis of the data.

Because of the current work of the Advisory Commission on Intergovernmental Relations (ACIR), which is in the process of publishing an updated and expanded study of its 1962 study of state and local fiscal capacity,[14] the treatment of fiscal capacity of states was designed to provide only an overview of recent trends in various fiscal capacity bases.

A number of indices of state fiscal capacity were examined. A representative system of tax bases was employed as a basis for comparisons among states for two major reasons: (1) correlations between the available fiscal capacity measures have been shown in previous research to be quite low, i.e., they do not move in a one-to-one relationship, and (2) there are a variety of tax bases currently in use by the states or being considered for use. By examining a representative system of tax bases, there was greater assurance of obtaining a complete picture of the fiscal capacity of each state. Data concerning the major tax bases of each state (with the exception of corporate income) were extracted and compared but were not subjected to hypothetical levels of taxation. The combination of tax bases include taxes on property, income, and consumption because they are the most common bases for the taxes levied by state or local governments.

FINDINGS AND CONCLUSIONS: FISCAL CAPACITY OF SCHOOL DISTRICTS

In Table 10-3 are summarized the results obtained from analyses of data concerning the fiscal capacity of school districts. The results obtained from the analysis of fiscal capacity of school districts also are

TABLE 10-3

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING FISCAL CAPACITY OF SCHOOL DISTRICTS

Comparison	p of Multivariate F		Univariate F of $p \leqq .01$		Step-down F of $p \leqq .01$		Best Discriminator	
	1962	1967	1962	1967	1962	1967	1962	1967
A vs. B	.349	.011	None	None	None	EBI/hsld. .001	EBI/capita	EBI/capita
All Remaining sources	<.0001	<.0001	EBI/cap. .0001 EBI/hsld. .0001	RS/cap. .0001 EBI/cap. .0001 EBI/hsld. .0001	EBI/cap. .0001	RS/cap. .0001 EBI/cap. .0001 EBI/hsld. .0001		
*B vs. C	.678	.006	None	None	None	EBI/hsld. .0008	EBI/household	EBI/household
*C vs. D	.028	.0003	None	RS/cap. .001	None	RS/cap. .001 EBI/hsld. .001	EBI/household	EBI/household
*D vs. E	.006	.0001	None	EBI/hsld. .0001	EBI/cap. .0006	EBI/cap. .0001	RS/capita EBI/capita	EBI/household RS/capita
*E vs. F	<.0001	<.0001	EBI/cap. .0001 EBI/hsld. .0001	RS/cap. .0008 EBI/cap. .0001 EBI/hsld. .0001	EBI/cap. .0001	RS/cap. .0008 EBI/cap. .0001 EBI/hsld. .0003	RS/capita	EBI/household
*F vs. G	.018	<.0001	RS/cap. .01	RS/cap. .0001 RS/hsld. .004 EBI/cap. .002 EBI/hsld. .004	RS/cap. .01	RS/cap. .0001	EBI/capita	RS/capita

*Comparison completed after rejection of null hypothesis

Notes: RS — Retail sales
EBI — Effective buying income

Category A — Major Urban Core City
Category B — Minor Urban Core City
Category C — Independent City
Category D — Established Suburb
Category E — Developing Suburb
Category F — Small City
Category G — Small Town

applicable with regard to the fiscal capacity of the categories of municipalities which were studied. Three measures of fiscal capacity—market value of property, retail sales, and effective buying income—were accepted as satisfactory indices of the three generally recognized components of fiscal capacity. Data on market value of property were obtained for each school district; data on retail sales and effective buying income were obtained for the municipality most closely associated with each school district. Property values were expressed on a per pupil in average daily membership basis; retail sales and effective buying income were expressed on per capita and per household bases. If one is willing to assume that the value of property in a school district is indicative of the value of property in the municipality most closely associated with the school district, one may then state that the relative fiscal capacity determined for each category of school districts utilized in this study closely approximates the relative fiscal capacity of each category of municipality. (Conversely, the procedure we employed required that we assume that the per capita and per household retail sales and effective buying income of the municipality most closely associated with a school district are acceptable indices of the fiscal capacity of the school district with regard to these two components of fiscal capacity.)

Based on the results summarized in Table 10-3 the following conclusions are drawn.

1. The difference in the fiscal capacity of the major urban core city category and the minor urban core city category increased between 1962 and 1967. In 1962, the difference between these two categories was not statistically significant. In 1967, the difference between the two categories was statistically significant at the .05 level.

2. In both 1962 and 1967 a difference statistically significant at the .0001 level existed when all remaining sources of variation were compared.

3. When the restriction concerning further analysis after rejection of an hypothesis was relaxed and all planned comparisons were performed, it was concluded that:

   a. The difference in the fiscal capacity of the minor urban core city category and the independent city category increased substantially between 1962 and 1967. The difference between the two categories was not statistically significant in 1962 but was statistically significant at the .01 level in 1967.

b. The difference in the fiscal capacity of the independent city category compared to the established suburb category increased from 1962 to 1967. In 1962, the difference between these two categories was statistically significant at the .05 level; in 1967, the difference was statistically significant at the .001 level.

c. The difference in the fiscal capacity of the established suburb category compared with the developing suburb category increased between 1962 and 1967. The difference between the two categories was statistically significant at the .01 level in 1962 and was statistically significant at the .0001 level in 1967.

d. The developing suburb category differed substantially from the small city category in terms of fiscal capacity in both 1962 and 1967. The difference between the two categories was statistically significant at the .0001 level in both 1962 and 1967.

e. The difference between the fiscal capacity of the small city category and the small town category increased between 1962 and 1967. The difference between the two categories in 1962 was statistically significant at the .05 level; in 1967, the difference was statistically significant at the .0001 level.

4. With regard to the measure of fiscal capacity which best discriminated between the categories compared, it was concluded that:

   a. Effective buying income per capita best discrimated between the major urban core city category and the minor urban core city category in both 1962 and 1967.

   b. Effective buying income per household best discriminated between the minor urban core city category and the independent city category in both 1962 and 1967.

   c. Effective buying income per household best discriminated between the independent city category and the established suburb category in both 1962 and 1967.

d. Retail sales per capita and effective buying income per capita best discriminated between the established suburb category and the developing suburb category in 1962. In 1967, effective buying income per household and retail sales per capita best discriminated between these two categories.

e. Retail sales per capita best discriminated between the developing suburb category and the small city category in 1962; in 1967, effective buying income per household best discriminated between these two categories.

f. Effective buying income per capita best discriminated between the small city category and the small town category in 1962. In 1967, retail sales per capita best discriminated between these two categories.

g. Property value per pupil in average daily membership did not discriminate effectively between categories in any of the comparisons.

5. With regard to the univariate F ratios, it was concluded that:

   a. Effective buying income per capita and effective buying income per household consistently varied significantly between the categories which were compared.

   b. Property value per pupil in average daily membership did not vary significantly between any of the categories compared.

   c. Retail sales per household varied significantly between categories in only one instance (F vs. G, 1967).

6. With regard to the step-down F ratios, it was concluded that:

   a. In 1962, effective buying income per capita was the variable which most frequently contributed to a significant difference between the categories being compared.

   b. In 1967, effective buying income per household and retail sales per capita appeared with equal frequency as major contributors to the variation which was found between categories.

In summary, in every instance the difference in the fiscal capacity of the school district categories—and assumedly the municipal categories—which were compared increased between 1962 and 1967. In no instance did the market value of property contribute to the significant differences which were found. Effective buying income, measured on either a per capita or a per household basis, was the major source of variation in fiscal capacity.

FINDINGS AND CONCLUSIONS: REVENUE AND EXPENDITURE OF SCHOOL DISTRICTS

The factor matrices obtained from the four factor analysis procedures did not reveal a more parsimonious system for categorizing school districts. In no instance did a factor matrix account for more than 57 percent of the total variance associated with the array of variables, and in most instances the factor matrices failed to account for as much as 50 percent of the total variance.

In Table 10-4 are summarized the results obtained from the analyses of data concerning the sources of revenue of school districts. Based on the results summarized in Table 10-4 the following conclusions are drawn:

1. No statistically significant difference existed between school districts in the major urban core city category and school districts in the minor urban core city category in either 1962 or 1967.

2. No statistically significant difference existed between school districts in the established suburb category and school districts in the developing suburb category in either 1962 or 1967.

3. When all remaining sources of variation were combined a difference statistically significant at the .0001 level was found in both 1962 and 1967.

4. When the restriction with regard to further analysis after rejection of an hypothesis was relaxed and all planned comparisons completed, it was concluded that:

TABLE 10-4

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING SOURCES OF REVENUE OF SCHOOL DISTRICTS

	P of Multi-variate F		*Univariate F of $p \leqq .01$*		*Step-down F of $p \leqq .01$*		*Best Discriminator*	
Comparison	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*
A vs. B	.406	.08	None	Other local taxes .003	None	Other local taxes .003	Other local taxes	Other local taxes
D vs E	.357	.735	None	None	None	None	Other governmental sources	Other local taxes
All remaining sources	<.0001	<.0001	State .0001 Prop. tax . 0001	State .0001 Federal .006 Prop. tax .0001	State .0001 Other govt. sources .009 Prop. tax .0001	State .0001 Federal .006 Prop. tax .0002		
• B vs. C	.023	.017	None	State .006	None	State .006	State sources	State sources
• C vs. D	.012	.014	State .0002	State .001	State .0002	State .001	State sources	State sources
• E vs. F.	.006	<.0001	Prop. tax .0005	Prop. tax .0001	Prop. tax .0006	Prop. tax .0001	Property tax	Property tax
• F vs. G	.051	.197	State .003	None	State .003	None	State sources	State sources

•Comparison completed after rejection of null hypotheses

a. A difference statistically significant at the .05 level existed between school districts in the minor urban core city category and school districts in the independent city category in both 1962 and 1967.

b. A difference statistically significant at the .05 level existed between school districts in the independent city category and the school districts in the established suburb category in both 1962 and 1967.

c. A difference statistically significant at the .01 level in 1962 and at the .0001 level in 1967 existed between school districts in the developing suburb category and school districts in the small city category.

d. No statistically significant difference existed between school districts in the small city category and school districts in the small town category in either 1962 or 1967.

5. With regard to which sources of revenue best discriminated between the categories compared, it was concluded that:

   a. Revenue from other local taxes best discriminated between the major urban core city category and the minor urban core city category in both 1962 and 1967.

   b. Revenue from state sources best discriminated between the minor urban core city category and the independent city category in both 1962 and 1967.

   c. Revenue from state sources best discriminated between the independent city category and the established suburb category in both 1962 and 1967.

   d. Revenue from other governmental sources and revenue from all other sources best discriminated between the established suburb category and the developing suburb category in both 1962 and 1967.

   e. Revenue from property taxes best discriminated between the developing suburb category and the small city category in both 1962 and 1967.

f. Revenue from state sources best discriminated between the small city category and the small town category in both 1962 and 1967.

6. With regard to the univariate F ratios, the variable identified as the best discriminator also was the only variable which varied significantly between the categories being compared. No variable consistently exhibited a significant difference in all of the comparisons which were made.

7. With regard to the step-down F ratios, in the comparisons where a significant difference was found, either revenue from the state sources or revenue from property taxes contributed most to the variation between the categories compared.

In Table 10-5 are summarized the results obtained from the analyses of data concerning the purposes of expenditure by school districts. Based on the results summarized in Table 10-5 the following conclusions are drawn.

1. A difference statistically significant at the .05 level existed between the major urban core city category and the minor urban core city category in 1962; in 1967 the difference between these two categories was not statistically significant.

2. When all remaining sources of variation were combined, a difference statistically significant at the .0001 level was found in both 1962 and 1967.

3. When the restriction with regard to further analysis after rejection of a null hypothesis was relaxed and all planned comparisons completed, it was concluded that:

   a. A difference statistically significant at the .0001 level existed between school districts in the minor urban core city category and school districts in the independent city category in both 1962 and 1967.

   b. A difference statistically significant at the .0001 level existed between school districts in the independent city category and school districts in the established suburb category in both 1962 and 1967.

TABLE 10-5

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING PURPOSES OF EXPENDITURE OF SCHOOL DISTRICTS

	p of Multi-variate F		*Univariate F of $p \leqq .01$*		*Step-down F of $P \leqq .01$*		*Best Discriminator*	
Comparison	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*
A vs B	.033	.073	Com. serv. .006 Op. & Mnt. .002	Attendance services .004	Com. Serv. .005 Op.& Mnt. .001	Attendance services .004	Operation and Maintenance	Fixed Charges
All Remaining Sources	<.0001	<.0001	Transp. .0001 Cap. out. .0001 Deb serv. .006 Admin. .0005 Att. serv. .002 Health .0001 Fix. ch .002 Other exp. .0001 Lg.-t. debt .0001	Transp. .0001 Cap. out. .0003 Debt. serv. .0001 Admin. .0001 Instruct. .0001 Att. serv. .0008 Health .0001 Fix. ch. .0001 Lg.-t. debt 0001	Transp. .0001 Admin. .002 Lg.-t. debt .0001	Transp. .0001 Debt serv. .0001 Admin. .001 Instruct. .0001 Lg.-t. debt .002		
*B vs C	<.0001	<.0001	Transp. .0001 Debt serv. .007 Other exp. .006 Lg.-t. debt .008	Transp. .0001	Transp. .0001 Debt serv. .004 Admin. .008 Lg.-t. debt .002	Transp. .0001 Instruct .002	Transportation	Transportation

TABLE 10-5 (Cont.)

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING PURPOSES OF EXPENDITURE OF SCHOOL DISTRICTS

*C vs D	<.0001	<.0001	Transp. .0001 Lg.-t. debt .005	Transp. .0001 Cap. out. .009 Debt serv. .0001 Admin. .0001 Lg.-t. debt .0001	Transp. .0001 Admin. .007	Transp. .0001 Admin. .006 Instruct. .0006	Transportation	Transportation
*D vs E	<.0001	<.002	Health .008 Fixed ch. .003 Other exp. .0001 Lg.-t. debt .003	Debt. serv. .0005 Admin. .001 Instruct. .0007 Fix. ch. .007	Other exp. .007	Debt. serv. .0001 Admin. .008	Long term debt	Debt Service
*E vs F	<.0001	<.0001	Transp. .0002 Cap. out. .0001 Admin. .008 Health .0001 Other exp. .0008 Lg.-t. debt .0001	Transp. .0001 Cap. out .0003 Debtserv. .0001 Admin. .0001 Instruct. .0006 Health .0005 Fix ch. .0006 Lg.-t debt .0001	Transp. .0002 Cap out. .0006 Longt.debt .008	Transp. .0001 Cap. out. .002 Debt serv. .0006 Lg.-t. debt .0002	Long term debt	Long term debt
*F vs G	<.0001	<.0002	Transp. .0001	Transp. .0001 Lg.-t. debt 002	Transp .0001 Lg.-t. debt .002	Transp. .0001	Transportation	Transportation

*Comparison completed after rejection of null hypothesis

c. A difference statistically significant at the .0001 level in 1962 and at the .01 level in 1967 existed between school districts in the established suburb category and school districts in the developing suburb category

d. A difference statistically significant at the .0001 level existed between school districts in the developing suburb category and school districts in the small city category in both 1962 and 1967.

e. A difference statistically significant at the .0001 level in 1962 and at the .001 level in 1967 existed between school districts in the small city category and school districts in the small town category.

5. With regard to which purposes of expenditure best discriminated between the categories compared, it was concluded that:

a. Expenditure for operation and maintenance best discriminated between school districts in the major urban core city category and school districts in the minor urban core city category in 1962; in 1967 expenditure for fixed charges best discriminated between them.

b. Expenditure for transportation best discriminated between school districts in the minor urban core city category and the school districts in the independent city category in both 1962 and 1967.

c. Expenditure for transportation best discriminated between school districts in the independent city category and school districts in the established suburb category in both 1962 and 1967.

d. Long term debt per pupil in average daily membership best discriminated between school districts in the established suburb category and school districts in the developing suburb category in 1962. Expenditure for debt service best discriminated between these two categories in 1967.

e. Long term debt best discriminated between school districts in the developing suburb category and school districts in the small city category in both 1962 and 1967.

f. Expenditure for transportation best discriminated between school districts in the small city category and school districts in the small town category in both 1962 and 1967.

6. With regard to the univariate F ratios, expenditure for transportation and long term debt most consistently exhibited a significant variation between the categories compared.

7. With regard to the step-down F ratios, in the comparisons in which statistically significant differences were found, expenditure for transportation was the major contributor to the significant variation between categories in four of the five comparisons.

In summary, differences did indeed exist between several of the categories compared with regard to both sources of revenue and purposes of expenditure. However, no significant difference with regard to their sources of revenue existed between school districts in the major and minor urban core city categories, school districts in the established and developing suburb categories, and school districts in the small city and small town categories. Where significant differences with regard to sources of revenue existed between the categories compared, the difference was due primarily to either revenue from state sources or revenue from property taxes. With regard to the purposes of expenditures, significant differences existed between all categories compared with the exception of school districts in the major and minor urban core city categories in 1967. Expenditure for transportation was most often the major contributor to the significant variation, with long term debt also an important contributor in some comparisons.

FINDINGS AND CONCLUSIONS: COMBINED DATA FOR SCHOOL DISTRICTS, MUNICIPALITIES, AND COUNTIES

In this section are summarized the results obtained from the analyses of combined data regarding sources of revenue and purposes of expenditure of three major units of local government. Thus, these data provide a virtually complete picture of the overall sources of revenue and purposes of expenditure of the major units of local governments — school districts, municipalities, and counties.

In Table 10-6 are summarized the results obtained from the analyses of data concerning the combined sources of revenue of school districts, municipalities, and counties. On the basis of the

TABLE 10-6

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING THE COMBINED SOURCES OF REVENUE OF SCHOOL DISTRICTS AND THE MUNICIPALITIES AND COUNTIES MOST CLOSELY ASSOCIATED WITH THE SCHOOL DISTRICTS

	p of Multi-variate F		*Univariate F of p≦.01*		*Step-down F of p≦.01*		*Best Discriminator*	
Comparison	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*
A vs. B	.0002	.004	Other local taxes .0001	Other local taxes .0003	Other local taxes .0001	Other local taxes .0002	Other local taxes	Other local taxes
O vs. E	.245	.221	None	None	None	None	Other local sources	Other governmental sources
F vs. G	.0006	.041	State .0002 Utilities .0009	State .002	State .0002 Utilities .004	State .002	State sources	State sources
All Remaining sources	<.0001	.0001	State .0001 O. loc. tax 0005 O. loc. source 0001 Utilities .003	State .0001 O. loc. tax .001 O. loc. sor. .0001 Utilities .005	State .0001 Prop. tax .006 O. loc. tax .001 O. loc. sor. .003	State .0001 O. loc. tax .0002 O. loc. sor. .005		
*B vs. C	.004	.003	State .0002	State .0004	State .0002	State .0004	State sources	State sources
*C vs. D	.002	.003	Other local sources .0002	Other local Sources .0001	Other local sources .002	Other local sources .0005	Other local sources	Other local sources
*E vs. F	.003	<.0001	State .0003 Prop. tax .004	State .0001 Prop. tax .001	State .0003	State .0001	State sources	State sources

*Comparison completed after rejection of null hypothesis

results summarized in Table 10-6 the following conclusions are drawn.

1. The difference between the major urban core city category and the minor urban core city category declined between 1962 and 1967. In 1962, the difference between the two categories was statistically significant at the .001 level. In 1967, the difference between these two categories was significant at the .01 level.

2. No difference existed between the established suburb category and the developing suburb category in either 1962 or 1967.

3. The difference between the small city category and the small town category declined between 1962 and 1967. In 1962, the difference between the two categories was statistically significant at the .001 level. In 1967, the difference between the two categories was significant only at the .05 level.

4. When all remaining sources of variation were combined, a differerence statistically significant at the .0001 level existed in both 1962 and 1967.

5. When the restriction with regard to further analysis after rejection of an hypothesis was relaxed and all planned comparisons were completed, it was concluded that:

    a. A difference statistically significant at the .01 level existed between the minor urban core city category and the independent city category in both 1962 and 1967.

    b. A difference statistically significant at the .01 level existed between the independent city category and the established suburb category in both 1962 and 1967.

    c. The difference between the developing suburb category and the small city category increased between 1962 and 1967. In 1962, the difference between these two categories was statistically significant at the .01 level; in 1967, the difference was statistically significant at the .0001 level.

6. With regard to which sources of revenue best discriminated between the categories compared, it was concluded that:

a. Revenue from other local taxes best discriminated between the major urban core city category and the minor urban city category in both 1962 and 1967.

b. Revenue from other local sources best discriminated between the established suburb category and the developing suburb category in 1962. In 1967, revenue from other governmental sources best discriminated between these two categories.

c. Revenue from state sources best discriminated between the small city category and the small town category in both 1962 and 1967.

d. Revenue from state sources best discriminated between the minor urban core city category and the independent city category in both 1962 and 1967.

e. Revenue from other local sources best discriminated between the independent citycategory and the established suburb category in both 1962 and 1967.

f. Revenue from state sources best discriminated between the developing suburb category and the small city category in both 1962 and 1967.

7. With regard to the univariate F ratios, revenue from state sources exhibited significant variation between the categories compared in three of the six comparisons in both 1962 and 1967.

8. With regard to the step-down F ratios, revenue from state sources was a major contributor to the significant variation in three of the five comparisons in which a significant difference was found.

9. Revenue from property taxes exhibited a significant variation between the categories compared in only on instance (E vs. F) and was not the major contributor to the variation in any comparisons in which a significant difference existed between the categories compared.

In Table 10-7 are summarized the results obtained from analyses of data concerning the combined purposes of expenditure of school districts, municipalities, and counties. On the basis of the results summarized in Table 10-7 the following conclusions are drawn.

1. No statistically significant difference existed between the major urban core city category and the minor urban core city category in either 1962 or 1967.

2. When all remaining sources of variation were combined, a difference statistically significant at the .0001 level existed in both 1962 and 1967.

3. When the restriction with regard to further analysis after rejection of an hypothesis was relaxed and all planned comparisons were completed, it was concluded that:

    a. A difference statistically significant at the .0001 level existed between the minor urban core city category and the independent city category in both 1962 and 1967.

    b. A difference statistically significant at the .0001 level existed between the independent city category and the established suburb category in both 1962 and 1967.

    c. The difference between the established suburb category and the developing suburb category increased between 1962 and 1967. In 1962, the difference between these two categories was statistically significant at the .05 level; in 1967, the difference between the two categories was statistically significant at the .0001 level.

    d. A difference statistically significant at the .0001 level existed between the developing suburb category and the small city category in both 1962 and 1967.

    e. A difference statistically significant at beyond the .0001 level existed between the small city category and the small town category in both 1962 and 1967.

4. With regard to which purposes of expenditure best discriminated between the categories compared, it was concluded that:

    a. Expenditure for police protection best discriminated between

TABLE 10-7

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING THE COMBINED PURPOSES OF EXPENDITURE OF SCHOOL DISTRICTS AND THE MUNICIPALITIES AND COUNTIES MOST CLOSELY ASSOCIATED WITH THE SCHOOL DISTRICTS

	p of Multi-variate F		*Univariate F of $p \leqq .01$*		*Step-down F of $p \leqq .01$*		*Best Discriminator*	
Comparison	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*	*1962*	*1967*
A vs B	.738	.166	None	Police .01	None	None	Police	Police
D vs E	.012		Education .0001		Education .0001		Education	
All Remaining Sources	<.0001	<.0001	Education .0001 Highways .0001 Police .008 Fire .0001 Sanitat. .0001 Parks, etc. .002 Libraries .001 Cap. out. .0001	Education .0001 Highways .0001 Fire .0001 Parks, etc. .001 Libraries .003 Gen. con. .009 Cap. out. .002	Education .0001 Highways .0001 Police .001 Fire .0001 Sanitat. .002 Parks, etc. .001 Libraries .0004 Cap. out. .008	Education .0001 Highways .0001 Health .0001 Police .001 Fire .0001 Parks, etc. .002		
•B vs C	<.0001	<.0001	Education .0002 Highways .0001 Police .0007 Fire .0001 Sanitat. .0001 Parks, etc. .004 Cap. out. .0002	Education .0001 Highways .0001 Police .002 Fire .0001 Parks, etc. .0003 Housing .004 Gen. con. .007 Interest .004	Education .0002 Highways .0001 Police .0001 Fire .0001 Sanitat. .0003 Parks, etc. .001 Libraries .009	Education .0001 Highways .002 Welfare .002 Health .0001 Police .0001 Fire .0001 Parks, etc. .0009 Gen. Con. .008 Interest .002	Fire	Fire

TABLE 10-7 (Cont.)

SUMMARY OF THE RESULTS OF THE ANALYSES OF DATA CONCERNING THE COMBINED PURPOSES OF EXPENDITURE OF SCHOOL DISTRICTS AND THE MUNICIPALITIES AND COUNTIES MOST CLOSELY ASSOCIATED WITH THE SCHOOL DISTRICTS

*C vs. D	<.0001	<.0001	Education .003 Hospitals .005 Fire .0001 Libraries .001 Cap. out. .0001	Education .0001 Fire .0001 Libraries .003 Cap. out. .0002	Education .003 Hospitals .004 Fire .0001 Parks, etc. .002 Libraries .0002 Cap. out. .002	Education .0001 Health .0001 Fire .0001	Fire	Fire
*D vs. E		<.0001		Education .0001		Education .0001 Fin. adm. .004		Education
*E vs F	<.0001	<.0001	Education .0001 Highways .006	Education .0001 Highways .0007 Unalloc. .007 Utilities .007	Education .0001 Highways .0008	Education .0001 Highways .0001	Education	Education
*F vs G	<.0001	<.0001	Housing .006 Cap. out. .0004	Education .001 Highway .007	Fire .01 Libraries .009	Education .001 Fire .0007	Police	Fire

*Comparison completed after rejection of null hypothesis

the major urban core city category and the minor urban core city category in both 1962 and 1967.

b. Expenditure for fire protection best discriminated between the minor urban core city category and the independent city category in both 1962 and 1967.

c. Expenditure for fire protection best discriminated between the independent city category and the established suburb category in both 1962 and 1967.

d. Expenditure for education best discriminated between the established suburb category and the developing suburb category in both 1962 and 1967.

e. Expenditure for education best discriminated between the developing suburb category and the small city category in both 1962 and 1967.

f. Expenditure for police protection best discriminated between the small city category and the small town category in 1962. In 1967, expenditure for fire protection best discriminated between these two categories.

5. With regard to the univariate F ratios, expenditure for education differed significantly between the categories compared in four of the six comparisons in 1962 and in five of the six comparisons in 1967. Expenditure for highways differed significantly between the categories compared in two of the six comparisons in 1962 and in three of the six comparisons in 1967.

6. With regard to the step-down F ratios, expenditure for education was a major contributor to the variation in four of the five comparisons in which a statistically significant difference was found in 1962, and in all five of the comparisons in which a statistically significant difference was found in 1967. Expenditure for fire protection was a major contributor to the variation in three of the five comparisons in which a statistically significant difference was found in both 1962 and 1967.

In summary, the comparison of the established suburb category with the developing suburb category was the only one of the six in which the difference between the categories compared with regard to sources of revenue was not statistically significant at beyond the .05 level. However, in only one comparison (E vs. F, 1967) was the difference between the categories significant at the .0001 level. Revenue from state sources was the variable which most frequently contributed to the variation between the categories compared and also was the best discriminator between categories more frequently than any other variable. With regard to purposes of expenditure, marked differences existed between the categories compared, with the exception of the major urban core city category and the minor urban core city category, where the difference between the two categories was not statistically significant. Expenditure for education was a major contributor to the significant variation between categories more frequently than was any other variable. Expenditure for fire protection best discriminated between the categories more frequently than did any other variable.

STATE FISCAL CAPACITY RANKINGS

In Table 10-8 will be found the rankings of the states for 1969 on per capita personal income, per household effective buying income, per capita effective buying income, per capita retail sales, and per household retail sales, and for 1966 on per capita real value of property and per pupil real value of property.

Many states had very consistent rankings from one base to another. For example, Alabama ranked from 46 to 50 over all bases, Indiana ranked from 14 to 23 over all bases, Kentucky from 40 to 47, Maine from 35 to 42, etc. Some states ranked in the highest five positions across many of the fiscal capacity measures. Alaska ranked in the top five on four of seven measures, Connecticut on three of seven, and Nevada on five of seven. Even more consistent was the number of states that ranked in the lowest five positions across the measures of fiscal capacity. Alabama ranked in the lowest five positions on seven of seven fiscal capacity measures, Arkansas on four of seven, Mississippi on five of seven, South Carolina on four of seven, Tennessee on four of seven, and West Virginia on five of seven.

SOME LIMITATIONS OF THE STUDY

Attention must be called to some of the attributes of the sample, the data, and the statistical procedures employed in the analyses which could have affected the results which were obtained; one who wishes

TABLE 10-8

RANKINGS OF STATES ON SEVEN FISCAL CAPACITY MEASURES

State	*Per Cap. Personal Income 1969*	*Per Househ. EBI 1969*	*Per Cap. EBI 1969*	*Per Cap. Retail Sales 1969*	*Per House. Retail Sales 1969*	*Per Capita Property 1966*	*Per Pupil Property 1966*
Ala.	48	49	50	49	49	46	47
Alaska	3	1	3	34	5	45	44
Ariz.	30	20	31	24	16	15	18
Ark.	50	50	48	44	48	31	33
Cal.	8	11	7	7	20	3	3
Colo.	22	25	22	18	23	19	31
Conn.	2	3	2	12	13	10	8
Del.	11	20	28	15	9	34	36
D.C.	1	4	1	1	3	NA	NA
Fla.	29	40	29	4	18	30	15
Ga.	37	33	38	39	38	50	50
Hawaii	13	2	17	38	4	23	16
Idaho	43	47	41	25	24	4	6
Ill.	6	5	4	6	10	16	9
Ind.	17	17	15	14	19	20	23
Iowa	25	26	19	4	6	11	11
Kansas	24	27	20	35	43	5	4
Ky.	44	43	42	47	47	43	40
La.	46	41	44	46	44	29	30
Maine	38	38	37	37	35	42	42
Md.	10	7	12	22	7	25	20
Mass.	9	8	8	11	14	44	37
Mich.	12	10	11	16	8	18	22
Minn.	21	15	18	17	15	41	41
Miss.	51	51	51	51	51	39	45
Mo.	27	32	25	20	34	22	17
Mont.	34	42	36	27	30	8	12
Neb.	20	30	26	8	17	7	5
Nev.	5	14	9	2	2	2	2
N.H.	26	24	24	9	11	37	29
N.J.	7	6	6	20	21	36	25
N.M.	41	39	45	45	41	26	39
N.Y.	4	9	5	23	32	21	7
N.C.	42	36	43	43	38	40	43
N.D.	39	37	40	26	12	14	14
Ohio	14	12	14	29	28	13	13
Okla.	35	45	34	36	45	24	28
Oregon	23	34	23	13	29	17	19
Penn.	18	18	16	30	36	49	46
R.I.	14	16	13	33	40	38	21
S.C.	49	44	49	48	46	27	34
S.D.	36	35	35	31	27	12	24
Tenn.	45	46	46	40	42	48	49
Texas	33	31	32	31	31	28	27
Utah	40	28	39	42	37	9	26
Vt.	31	22	30	3	1	47	48
Va.	32	23	33	41	39	32	32
Wash.	16	13	10	10	22	6	10
W. Va.	47	48	47	50	50	33	38
Wis.	19	19	21	28	26	35	35
Wyo.	28	29	27	19	25	1	1

to generalize from the findings of the study should be cognizant of these limitations.

Limitations Associated With the Sample

The sample of school districts employed in the study was a proportional random sample drawn from eight states carefully selected to provide both geographic dispersion and widespread distribution with regard to social, economic, and demographic characteristics which previous researchers have shown to influence fiscal capacity, revenue, and expenditure patterns of school districts and other units of local government. In the major urban core city category, the sample consisted of all 13 school districts which met the criteria for classification in this category. A proportional random sample of 35 districts was drawn in each of the other six categories. However, it was necessary to eliminate one school district from the minor urban core city category and one school district from the developing suburb category because certain data for these two districts (or for the municipality or county associated with them) were not available.

The procedure employed in drawing the sample of school districts tended to give greater representation to the states which had a relatively large number of school districts. Some may feel, for example, that New York (with 74 school districts) and Texas (with 65 school districts) were over represented in the sample, and that Florida (with 18 school districts) was under represented. The difference arose primarily in the two suburb categories where Florida (because of its county-unit district organization) was not represented in the sample and where New York and Texas were represented by 40 and 19 school districts respectively. However, by the definition we employed, suburbs were associated with standard metropolitan statistical areas; and New York and Texas had a preponderance of the standard metropolitan statistical areas in the eight states from which the sample was drawn.

Others may feel that exclusion from the sample of school districts which did not have at least 1,500 pupils in average daily membership may have short changed some of the less populous states. The researchers maintain, however, that the characteristics of school districts with fewer than 1,500 pupils in average daily membership are very similar to those of school districts included in our small town category.

Limitations Associated with the Data

One must realize that all units of local government—school districts, municipalities, and counties—are creatures of the state. They were created by the state, either by statute or charter, and reflect decisions by the state with regard to how units of local government should be financed. In some states, local units of government receive considerable revenue from shared taxes or grants in aid from the state. In other states, virtually all revenue received by local units of government is derived from local taxes and the state's contribution is minimal. These differences are, of course, reflected in the revenue patterns of units of local government.

It may be argued that it is inappropriate to compare units of local government on the basis of their sources of revenue. The researchers would argue, however, that revenue sources reflect fundamentally the fiscal capacity of a unit of local government in that they reflect the extent to which a unit of local government is able to tap the fiscal resources within its boundaries to finance local governmental services. A tax base which cannot be tapped, either directly by a local tax or indirectly through shared taxes or subventions, cannot realistically be considered to reflect the fiscal capacity of a unit of local government.

Data concerning the revenue and expenditure of school districts were obtained directly from state department of education publications or from the official reports filed by the school districts. To the extent that local district reporting was accurate, and to the extent that expenditures were properly categorized according to function, the researchers are confident that the data concerning school district revenue and expenditure were accurate.

Data concerning the revenue and expenditure for municipalities and counties were not collected by each of the eight states from which the sample of school districts was drawn. The researchers assumed that the data reported in the *Census of Governments* were accurate and properly categorized by function, and made no effort to check the validity of the data. In cases where data concerning the municipality or county were not reported in the *Census of Governments*, the average revenue and expenditure reported for units of similar size in that state were utilized. A further complication arose from the fact that the fiscal year of municipalities and counties varied from one state to another. Consequently, the data reported in the *Census of Governments* did not all cover the same twelve month period.

Some limitations also were imposed by the nature of the data and the data transformations which were required. The data concerning revenue and expenditure of municipalities and counties were rounded to the nearest $1,000; data concerning the population of the various municipalities and counties were rounded to the nearest 100. Obviously, revenue per capita and expenditure per capita computed from the above data represent an approximation of the true expenditure per capita rather than the exact expenditure per capita.

It was necessary to estimate the average daily membership of school districts in Texas and New York for the years in which only average daily attendance was reported. This transformation was accomplished by using the ratio of average daily attendance to average daily membership for the entire state to estimate the average daily membership of each district.

Since no data concerning the total population of the school districts in the sample were available, school district populations were obtained by using the ratio of average daily membership to total district population in Wisconsin school districts categorized according to the taxonomy used in the study to estimate the total population of each school district in the sample. Obviously, this procedure required several simplifying assumptions. For example, the assumption was made that in each category there would be the same proportion of non-public to public school enrollment and the same age distribution of population in each state as there is in Wisconsin. To the extent that these assumptions were in error, the results of the analyses based on per capita revenue and expenditure of school districts are in error.

Also, certain revenue categories were not completely compatible when school district, municipal, and county revenue and expenditure were combined. For example, no distinction was drawn between revenue from local property tax and revenue from other local taxes in the county revenue data. Therefore, the assumption was made that all county revenue from taxes was derived from local property tax and it was so classified. Likewise, in the county revenue data no distinction was drawn between revenue from the state and revenue from other governmental sources, and all revenue from these sources was classified as intergovernmental revenue.

With regard to fiscal capacity, the data concerning retail sales and effective buying income were obtained from *Sales Management's* "Survey of Buying Power" and are subject to the usual limitations regarding these measures. Data concerning the market value of property in each school district were obtained from state education department records in all states except Texas and Florida. In Texas, the market value of property for each school district was based upon the value reported for each school district in a recent major study of the Texas state support program. In Florida, the market value of property was estimated on the basis of the ratio of assessed to true value of property reported by the state comptroller.

Limitations Associated with the Statistical Procedures

Factor analytic procedures were employed in this study in an attempt to identify a more parsimonious taxonomy for classifying school districts, municipalities, and counties. The factor matrices were examined only with this purpose in mind. Others may wish to examine the factor matrices with other purposes in mind. Serendipitous findings may emerge from such efforts.

The multivariate analysis of variance program utilized in this investigation is a powerful statistical tool. However, it does have limitations which influence the results obtained as well as the interpretation which may be given such results. Although theoretically further analysis is precluded once a null hypothesis is rejected, the researchers felt it necessary to relax this restriction in order to extract the maximum amount of information from the data. The results of analyses which were conducted after rejection of the null hypothesis should be considered with this restriction in mind. It should further be noted that the order in which comparisons between categories are made may influence the extent to which significant differences between them are identified. That is, a different order of comparison of categories could result in different findings, at least with regard to the significance of the multivariate F ratio obtained.

The univariate and step-down F ratios are useful in determining the relative contribution of each variable to the variance between the categories being compared. The univariate F ratios provide some indication of the extent to which a variable, considered alone, varies between two categories. The step-down F ratios indicate the extent to which a variable contributed to a difference between categories when its intercorrelation with the variables previously entered into the equation is considered. Thus, the step-down F ratio is affected by the sequence in which variables are entered and is accurate only for a particular position in a given array of variables. That is, a change in the sequence in which variables were entered, or a change in the array of variables would undoubtedly alter the step-down F ratio obtained for a given variable.

The discriminant function coefficients also are valid only for the particular array of variables and are quite sensitive to changes in the sample. Consequently, a change in the array of variables or in the composition of the sample would be likely to change the discriminant function coefficient of the given variable.

IMPLICATIONS FOR FINANCING EDUCATION

Many implications relative to the financing of education (and other services provided by units of local government) could be drawn from the results of this study. The researchers do not purport to have identified all of the implications which may be drawn from the study, or even the most important implications, for in such matters importance, like beauty, is to a large degree in the eye of the beholder. That is, the perception of relative importance is conditioned by one's value orientation rather than by tests of statistical significance. Having expressed this caveat, the researchers believe the following implications are worthy of note.

Fiscal Equity

If measures related to market value of property per pupil in average daily membership are regarded as the criteria for judging fiscal equity in the support of education (as they are in nearly every state support program), one would be tempted to conclude that a fair degree of fiscal equity has been attained. No significant variation was found between the categories of school districts compared in this study with regard to fiscal capacity as measured by the market value of property per pupil in average daily membership. Similarly, the variance in property tax rate between the categories compared was barely significant at the .05 level in 1962 and was not significant in 1967. In both 1962 and 1967, mean property tax rates were strikingly similar in all categories except the established suburb and the developing suburb, where they were about two mills higher than in the next highest category. Revenue from property taxes per pupil in average daily membership was not a major contributor to the variation between the categories of school districts compared, except in the comparison of school districts in the developing suburb category with school districts in the small city category. Revenue from property taxes per capita varied significantly between the categories of municipalities compared only in the comparison of the independent city category with the established suburb category. When all sources of revenue of school districts, municipalities, and counties were combined, revenue from property taxes varied significantly between categories only in the comparison of the developing suburb category with the small city category. Thus, the researchers did not identify extraordinary fiscal inequities between the categories compared *if* market value of property, property tax rates, or revenue from property taxes are used as the criteria for determining whether or not fiscal equity has been attained.

If, however, indices of consumption and income (such as retail sales and effective buying income) are applied as the criteria for judging fiscal equity, then marked differences existed between several of the categories compared in the study with regard to both the fiscal capacity and the sources of revenue of school districts, municipalities, and counties. Effective buying income, expressed on either per capita or per household bases, was the major source of variation between the school district categories compared with regard to fiscal capacity. Retail sales per capita also was an important source of variation between categories in several instances. Revenue from state sources was a major contributor to the variation between school district categories compared with regard to sources of revenue, and to the variation between categories in the analyses based on the combined sources of revenue of school districts, municipalities, and counties.

The implication is clear that, if greater fiscal equity relative to the income and consumption components of fiscal capacity is desired, it must be achieved through the use of direct taxes on these fiscal bases, for the research demonstrated that no correlation existed between the market value of property per pupil in average daily membership and retail sales and effective buying income per capita in either 1962 or 1967. The data also strongly imply that taxes on income and consumption can effectively be levied only by the largest units of local government. It will be recalled that revenue from other local taxes varied significantly only in the comparison involving the major urban core city category and the minor urban core city category. The mean revenue per capita from other local taxes was much higher in the major urban core city category than it was in all other categories in both 1962 and 1967— for school districts, for municipalities, and for school districts, municipalities, and counties combined.

In a study developed in conjunction with this project, Bruss[15] demonstrated clearly that it is possible to achieve greater fiscal equity for the taxpayers in a county if all school districts within that county are considered as one fiscal unit for taxing purposes. The results of Bruss' study, which included only Wisconsin school districts, also showed that each of the counties he studied possessed unique fiscal characteristics, thus suggesting that even greater fiscal equity might be achieved if taxing units larger than a county were utilized, e.g., regional taxing authorities or the state.

The results of this study clearly indicated that fiscal capacity as measured by the market value of property was not a major source of variation among the categories of school districts we studied, but that fiscal capacity as measured by effective buying income was a major source of variation among the categories. It seems clear that greater fiscal equity cannot be achieved through taxes levied by units of local government; it can be achieved only through taxes levied by larger taxing units such as the state or federal government. Thus, further significant progress toward fiscal equity will be achieved only through programs for financing education which utilize the taxing powers of the states and the federal government to tap those components of fiscal capacity which units of local government cannot tap effectively, and which redistribute the revenue derived from such taxes in direct proportion to the fiscal needs of school districts and other units of local government.

Revenue and Expenditure of Units of Local Government

Wide differences of opinion exist with regard to how the demand (need) for the services provided by units of local government should be measured. This research does not propose to resolve this question. The researchers do, however, maintain that the existing level of expenditure per capita provides a relatively precise calculus of the priority assigned the provision of various public services, even if it does not represent an accurate measure of the absolute demand (or even the perceived demand) for such services. The expenditure per capita for various governmental functions may be considered to represent the consensus of the voters in a political unit with regard to the priority which should be assigned each function as reflected in the share of the limited fiscal resources of the political unit allocated to each function. Thus, an examination of the resources allocated to each governmental function by the various units of local government provides some insight regarding the priority attached to a given function.

Education was assigned the highest priority of any function in each of the seven categories we studied, and was accorded an extremely high priority in the two suburb categories. The expenditure per capita for education varied considerably between categories and contributed significantly to the variation between the categories compared more frequently than did any other variable. Certain functions—among them police protection, fire protection, sanitation (other than sewage), and housing and urban renewal — were assigned a higher priority in the two urban core city categories than in the other five categories. Expenditure for highways, on the other hand, was assigned a lower priority in the two urban core city categories than in the other five categories. A number of functions (e.g., sewage, financial administration, and general control), were assigned about the same priority in each category, at least as judged by expenditure per capita for the function. Welfare was by no means an urban core city phenomenon — expenditure per capita for public welfare in the small town category exceeded that in the major and minor urban core city categories in both 1962 and 1967.

With regard to sources of revenue, the favored status of the suburban and small town categories with regard to revenue from state sources was evident in the analyses of the combined revenues of units of local government and was striking in the analyses of the revenue sources of school districts. This situation is undoubtedly the result of many factors — the reliance on property value as an index of fiscal capacity in existing state support programs, the relatively high ratio of school age children to total population in the suburbs, the lack of industrial and mercantile property in the tax base of suburbs and small towns, and the alleged dominance of state legislatures by rural legislators and more recently by a coalition of rural and suburban legislators, to name only a few.

At the same time, it should be noted that the suburbs are not enclaves where low property tax rates universally prevail. Revenue from property taxes was as high or higher in the two suburb categories as it was in any other category on both per pupil in average daily membership and per capita bases. However, the relative burden of the property tax undoubtedly was somewhat lighter in the two suburb categories, where effective buying income, i.e., income after taxes, was higher than in any of the other five categories on both per capita and per household bases.

The priority assigned to the various components which comprise the total expenditures for education by school districts in each of the seven categories can be ascertained from the data regarding expenditure by school districts. Expenditure for instruction was by far the most important component in each of the seven categories and was largest in the two suburb categories. However, expenditure for instruction varied significantly between categories *only* when the independent city category was compared with the established suburb category and when the developing suburb category was compared with the small city category. Expenditure for instruction was not a major contributor to the variation between the categories compared. Expenditure for transportation was a major source of variation between the categories compared and was much higher in the suburb and small town categories than in the other four categories. Expenditure for capital outlay and expenditure for debt service were, as expected, substantially higher in the two suburb categories than in the other five categories. Expenditure for administration and expenditure for fixed charges (i.e., fringe benefits) also were substantially higher in the two suburb categories than in the other five categories.

The picture which emerges, then, is one in which school districts serving established suburbs and developing suburbs spend substantially more for instruction (which is reflected in a lower ratio of pupils per professional staff member), provide considerably more attractive fringe benefits for their teachers, spend somewhat more for administration, and spend substantially more to transport pupils. Their advantageous position with regard to the level of spending for education is made possible by a willingness to accept a relatively high level of property taxes for education, by generous financial support from the state, and by assigning a relatively low priority to many of the other services provided by units of local government.

Categorization of School Districts, Municipalities, and Counties

The taxonomy employed to categorize units of local government was based primarily upon the results of previous research tempered by the research team's knowledge with regard to the availability of the data which were required. The taxonomy was useful, and the results of the factor analyses certainly did not reveal a more useful taxonomy within which this universe might be categorized.

With regard to school districts, results of the study implied that the major urban core city category and the minor urban core city category could be combined. The researchers are willing to concede, however, that the largest cities may defy categorization, i.e., they may be unique entities which require unique treatment. Indeed, most of the largest cities now are dealt with as unique entities by the state. A further concession is that the categorization of suburbs may be oversimplified. The results of previous research indicated that an advantage could be gained by distinguishing between residential suburbs and industrial suburbs, and by further distinguishing between high income residential suburbs and low income residential suburbs.

It may be argued that centralizing all local functions on a county or regional basis would eliminate the need for categorizing school districts and municipalities. However, the researchers are unwilling to accept centralization as a panacea for they see little evidence that the quality of decisions made by central units of government consistently is superior to the quality of decisions made by local units of government. The researchers prefer to maintain a viable system of units of local government which are more likely to sense and respond quickly to the need of their constituents. From this value orientation, therefore, the research team believes that a taxonomy which accurately reflects real differences in fiscal capacity and public demands (needs) is essential to the attainment of fiscal equity in the provision of education as well as other public services.

FOOTNOTES

1. See, for example, Otto Eckstein, *Public Finance.* 2d ed.; Englewood Cliffs, N.J.: Prentice-Hall Inc., 1967, 58-62; John F. Due, *Government Finance*, ed ed.; Homewood, Ill.: Richard D. Irwin, Inc., 1963, 102-121; Harold M. Groves, *Financing Government*, 4th ed., New York: Henry Holt & Co., 1954, 11-24.

2. Eckstein, 59.

3. See, for example, Walter J. Blum and Harry Kalven, Jr., *The Uneasy Case for Progressive Taxation.* Chicago: University of Chicago Press, 1953.

4. Due, 120-121.

5. J. M. Buchanan, "Federalism and Fiscal Equity," *Readings in the Economics of Taxation*, ed. Richard A. Musgrave and Carl S. Shoup. Homewood, Ill.: Richard D. Irwin, Inc., 1959, 93-109.

6. Ellwood P. Cubberley, *School Funds and Their Apportionment.* New York: Teachers College, Columbia University, 1906, 54.

7. George D. Strayer and Robert M. Haig, *The Financing of Education in the State of New York*, A report of the Educational Finance Inquiry Commission. New York: Macmillan Co., 1923, See especially 173-175.

8. See, for example, LeRoy J. Peterson, Richard A. Rossmiller, Stewart D. North and Howard E. Wakefield, *Economic Impact of State Support Models on Educational Finance*, Madison, Wis.: School of Education, University of Wisconsin, 1963, and Erick L. Lindman, *State School Support and Municipal Government Costs*, Lost Angeles, Cal.: University of California, Los Angeles, 1964.

9. See, for example, Alan K. Campbell and Seymour Sacks, *Metropolitan America: Fiscal Patterns and Governmental Systems.* New York: The Free Press, 1967, and Advisory Commission on Intergovernmental Relations, *Fiscal Balance in the American Federal System*, Vol. II: *Metropolitan Fiscal Disparities.* Washington, D.C.: GPO, 1967.

10. U. S. Office of Education, *Education Directory, Part II: Public School Systems*, 1968-69, Washington, D.C.: GPO, 1969.

11. Bureau of the Census, *Standard Metropolitan Statistical Areas in the United States as Defined on May 1, 1967, With Population in 1960 and 1950*, Current Population Reports, Series P-23, No. 23, October 9, 1967. Washington, D.C.: GPO, 1967.

12. U. S. Office of Education, *Education Directory, Part II: Public School Systems*, 1962-63. Washington, D.C.: GPO, 1963.

13. State of Wisconsin, *Supplement to Taxes, Aids and Shared Taxes in Wis-*

consin Municipalities, 1966. A Report prepared for the Governor's Task Force on Local Government Finance and Organization. Madison, Wis.: Department of Revenue, 1968.

14. Advisory Commission on Intergovernmental Relations, *Measures of State and Local Fiscal Capacity and Tax Effort*, Washington, D.C.: GPO, 1962, 4.

15. Lyle R. Bruss, "An Analysis of Relationships Between Fiscal Capacity and Tax Effort in School Districts and Hypothetical Regional Taxing Agencies in Wisconsin," (unpublished Ph.D. dissertation, The University of Wisconsin, 1970).

CHAPTER 11

The Relationship of School District Reorganization to State Aid Distribution Systems

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The constitutions in all states contain language to the effect that the legislature has the responsibility for maintaining a thorough and efficient system of public education free to all young people within certain age limits. In fulfilling this obligation, legislatures have generally enacted statues to permit the formation and reorganization of local school units. While most of the responsibilities for operating the schools have been delegated to these local units, legally public education remains a function of the state. Moreover, the United States Supreme Court in *Brown v Board of Education* held that educational opportunity within a state must be made available to all on equal terms.

State provisions for education generally fall far short of this goal. Scarce state resources and faulty state aid distribution systems account for much of the observed disparity in educational opportunity within states. Likewise, an inadequate local school district structure contributes to the problem. The condition is often characterized by an overabundance of districts, many of which have limited resources and miniscule school populations. Other districts have been gerrymandered to create islands of tax privilege for some, while leaving swamps of squalor for their neighbors. Also, the flight of the more prosperous urban dwellers to the affluent suburbs and a subsequent tightening of lines between the central city and its suburbs have introduced social, economic, and racial stratification, as well as geographic separation. Equality of education is more a myth than a reality in many areas of the nation in 1970.

Opposing forces appear to be operating in the area of school district reorganization. Concern for economical school operation has been a prime consideration in the move to develop more effective school district organizations in many states. At the same time, legislatures in some states have increased state levels of school support under conditions that have subsidized ineffective and inefficient administrative units. Likewise, state aids in metropolitan areas virtually insure a separate and unequal existence for cities and suburbs.

State aid formulas are political responses to educational needs and may be classified as neutral, favorable, or negative with regard to school district reorganization. These responses are often generated without adequate theoretical and policy frameworks derived from empirical research. There is a dearth of research findings reported in the literature dealing with this problem. More knowledge is needed to develop conceptual models for the distribution of the resources allocated to education in order to relate the educational institution to the emerging patterns of contemporary society.

This conspicuous absence of reported research relative to the relationship between state aid distribution systems and school district organization is strange because many experts in school finance have noted that such a relationship does exist. However, there are no studies which have attempted to measure this relationship. Therefore, all of the knowledge is purely speculative. This may be true because only a few states have made direct grants to encourage the adoption of district organization plans. Moreover, the amount of money provided through incentive aids typically is very small when compared to the amount of money distributed through the general state support program. Few of the states have adopted financial penalties; that is, deny some state monies to districts for failing to reorganize. Moreover, many states have provisions in the law which may actually discourage school district reorganization. These provisions take many forms. The most common one is a reduction in state aids to one or more partners in the reorganization with less aid available to the new district than is now being paid to the several separate districts. Another example pertains to a limitation on bonding capacity in the new district. Also, some states have included sparsity factors in their state aid formulas which encourage the continuation of unnecessary, inefficient districts.

The legislatures in the several states are confronted with perplexing problems as they seek to satisfy constitutional mandates and court decrees relative to good schools for all. Three options seem to offer some promise. The states can direct more resources to the school districts with the greatest need; establish regional or intermediate districts to collect and distribute taxes to local operating districts; and create a more efficient school district organization through legislative fiat. Many states have been both attracted to and disillusioned with the first option. Foundation aid programs generally incorporate this feature. However, the patchwork of distressed and special district aids bears witness to the limitations of this approach to equalizing educational opportunities, especially in states with faulty school district structures. Regional units are used to equalize tax levies and the quality of schools in some states. Also, 24 states have adopted legislation forcing the abolition of certain types of school districts. Political considerations, however, have often deterred legislatures from bold action to reorganize schools. Finally, some legislatures have attempted to manipulate school aids in a fashion to encourage the citizens in local communities to form stronger school units through consolidation.

The conditions which contribute to the success or failure of all of these efforts are not understood because there is a paucity of empirical research evidence to guide the decision makers. This study was addressed to this need for additional knowledge. Specifically, the relationship between state aid distribution systems and school district reorganization was investigated in this study. As indicated below, school district reorganization was defined broadly to include the use of regional units to levy property taxes and distribute state aids.

SCHOOL DISTRICT REORGANIZATION DEFINED

Education is recognized as a function of the state. As a result, state legislatures, subject to constitutional provisions, have the authority to establish, maintain, and regulate schools. Thus the legal powers held by school districts are those delegated to them by the state. School districts are purely creatures of the state and as such have no inherent powers. They may be created or abolished and their powers may be increased or diminished at the will of the state.

The legal restructuring of school districts is referred to as school district reorganization. Such restructuring normally involves the combining of one or more school districts into a single larger administrative unit. However, the division of existing districts, such as large cities or counties, into smaller administrative units is also a type of school district reorganization. This type of reorganization, which creates additional school districts rather than abolishing existing ones, should not be confused with the internal modification of administrative organizations. Several large school systems have moved toward such internal modification or "decentralization." However, the units created by this process have no state delegated powers. Therefore, this type of internal restructuring can logically be described as administrative procedure, rather than school district reorganization.

The creation of new or the modification of existing intermediate or regional units with state delegated powers which are held jointly or shared with local school districts represents still another form of school district reorganization. The reorganization in this instance may represent a change in the physical boundaries of the unit or it may refer to a redistribution of powers between regional units and local school districts. An example of the latter is a transfer of taxing authority from local school districts to intermediate units to achieve a greater degree of equalization of tax effort. This form of reorganization may be combined with the division of large existing school districts into smaller units. Such proposals have been advanced as partial solutions to the problems besetting urban schools.

RESEARCH PROCEDURES

This investigation began with an analysis of all laws in the 48 contiguous states which pertain to school district reorganization and educational finance. This search of the statutes, and a questionnaire which was mailed to appropriate administrators in all state education agencies, produced information which was used in selecting a sample of 16 states for the study.* The principal criteria used in drawing the sample included:

1. Fiscal provisions for school district reorganization
2. Fiscal capacity of school districts within states
3. Sparsity and density of population

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* California, Colorado, Indiana, Iowa, Maine, Michigan, Minnesota, Mississippi, Nebraska, New Hampshire, New York, Oregon, Pennsylvania, South Carolina, Utah, and Wisconsin.

412

4. Number of school districts

5. Historical development of school district organization in the state

6. Geographical and topographical considerations

7. Regional concepts of local control of education.

Additional questionnaires, printed documents, and interviews with state education agency officials in the 16 states generated most of the data for this study. Data for development of criterion and predictor variables were obtained from state department of education reports. The primary source of these data was the annual financial reports. However, in most cases additional information was obtained by requesting specific supplemental reports. During the interview visits to each state department of education, questions were resolved regarding interpretation of information in published reports. Follow-up visits were completed for the purpose of gathering data from local school district financial reports on file in the departments of education in those states where information pertinent to the study was not available in printed reports. The basic data were compiled in a standard format and state profiles were prepared.

The data for the study included:

1. Level of expenditure per pupil from 1948-1968. Expenditures were categorized by fund, type, and size of districts. Fund types included current expense, capital outlay, and debt service.

2. Level of state support for education in the districts. Aids applicable to the funds listed above were tabulated. Correction aid for sparsity and premium aid for reorganization were of special interest.

3. Nature of the aid distribution formulas in effect during the 20-year period and the dates they were put into effect. The elements of the formulas were categorized by the funds types identified above.

4. Local school tax rates in the districts for the 1967-68 period.

5. Progress of school district reorganization, including the number of districts of various types by year during the period.

6. The statutes pertaining to reorganization. Also, related statutes which deter or encourage the consolidation of urban and suburban districts in metropolitan areas were examined. These statues pertained to teacher retirement, tenure, and certification systems.

7. The statutes pertaining to intermediate units. The amount of state and local funds received and distributed by the intermediate units was obtained.

8. The school districts included in the state economic planning regions.

Answers were sought for the following questions:

1. What types of incentive aids are associated with the greatest amount of school district reorganization?

2. What factors in the state aid distribution systems retard school district reorganization?

3. What legal provisions are associated with the greatest amount of school district reorganization?

4. To what extent has school district reorganization reduced variations in tax-paying ability and expenditure per pupil within states?

5. Has school district reorganization introduced greater stability and equity into tax structures?

6. At what level of state support for education does the greatest amount of school district reorganization take place?

7. What degree of tax equalization can be achieved by transferring a portion of the local current expense levy to a uniform regional levy for school purposes?

The models used in question 7 provided for a sharing of the net current expense levy between the local district and the region, with all proceeds from regional taxes distributed on the basis of ADA. Net current expense was defined as that portion of current expenses which was raised by local taxes. The models distributed the tax levies as follows:

Model One: Twenty-five percent regional and 75 percent local sharing

Model Two: Fifty percent regional and 50 percent local sharing

Model Three: Seventy-five percent regional and 25 percent local sharing

Model Four: One hundred percent regional taxation

Model Five: Regional support for net current expense equal to the mean in the region

Model Six: Regional support for $100 per pupil in ADA

Model Seven: One mill regional tax

Treatment of basic data was accomplished through use of computer facilities and procedures available at the University of Minnesota and the College of St. Thomas in St. Paul. The CDC 160-A and 6600 computers and UMST 500 and Program Regram processing techniques were supplemented with several transitional Fortran programs to facilitate the computations associated with regression analysis.

CONCLUSIONS

This study tested the proposition that there is a relationship between the pattern of district organization in a state and the financial resources available for education in local districts. In effect, this was an examination of the results of the political processes of state legislatures as they have exercised their constitutional obligation to provide for a system of public schools. The legislatures have created school districts and provided for their support through a combination of local taxes and state aids. Since legislatures retain the power to develop formulas for the distribution of state monies and delegate taxing authority to local districts, the combination can be used to accomplish any legitimate educational purpose. Specifically, this study was a search for those elements in both state and local school finance which have implications for school district reorganization. Also included was an examination of some related provisions for public education which seem to have an impact on school district structures, and, therefore, relevance for school finance.

The conclusions which follow begin with a discussion of factors related to the equalization of educational expenditures. The principal thrust of this portion of the study was to determine the relationship between equalization and school district size, wealth, school tax rates, expenditures, and foundation aid. The second portion of the conclusions is clustered around legislative provisions which are related to school district reorganization. Of interest here are bonded indebtedness, special fiscal programs, incentive aids, transportation, foundation aid programs, minimum program standards, sparsity factors, special education, legal procedures, reorganization "package," mandatory legislation, federal intervention, and professional provisions. The final section of the conclusions pertains to the use of regional educational units as taxing agencies to support education. Seven alternative models were designed and tested. The purpose of these models was to examine the extent of equalization in tax rates and school expenditures which could be obtained through the use of uniform regional taxes to support all or a portion of that part of current school costs which were derived from local taxes.

This paper ends with generalizations to state finance models. This final portion is designed to be of maximum value to persons interested in preparing legislative packages which will achieve a high degree of equalization in tax rates and school expenditures.

Factors Related to Equalization in Educational Expenditure

School District Size. Extreme variation in the size of school districts as indicated by the number of students in average daily attendance or membership was evident in every state in the study. Even states with a small number of local school districts have not been successful in eliminating the small school district. For example, Utah with but 40 districts has one district with 187 students.

Small districts tend to incur large per pupil expenditures. The existence of large numbers of small school districts explains, in part, the variation in educational expenditures. However, the correlation between school district size and educational costs is not very high. Of the five variables examined in the regression analysis, school district size contributed least. The null hypothesis stating there was no relationship between school district size and educational expenditures was rejected in only three of eleven tests. Furthermore, in but one case was size found to be the most important variable for the predicting of expenditures.

Wealth. Wealth in the sample school districts as measured by assessed valuation also showed great diversity for all types of organizational patterns. The unified district pattern clearly provides for a more equitable tax base for school purposes. It cannot be concluded, however, that the unified district pattern and/or the existence of fewer school districts has eliminated the unequal distribution of wealth.

In general, assessed valuation was the significant element in predicting expenditures. This conclusion was derived from the results of the multiple correlation analysis and also by the application of the F-test to the null hypothesis stating there is no relationship between assessed valuation and school expenditures. In ten out of eleven cases, the hypothesis was rejected. In no case was a total absence of relationship found between wealth and expenditures. Further, in no case was the relationship negative in terms of the correlation coefficient. Therefore, it was concluded that wealth of the local school district was a powerful factor in determining the expenditure level. It would appear, therefore, that state support systems designed to equalize the resources available to the local district are not successful in achieving their stated purpose.

School Tax Rates. Considerable variation in tax rates was the norm for all types of districts. However, non-operating and elementary districts showed the greatest range with relatively high tax rates in some and absolutely no school tax levies in others.

Tax rates of the local school district were second in importance to valuation in predicting the level of expenditures for the cases studied. The results of the correlation analysis provided the basis for this conclusion. Further evidence was gained by testing the null hypothesis stating there is no relationship between school tax rates and educational expenditures. In nine out of eleven cases studied the hypothesis was rejected, indicating the importance of the variable.

The evidence presented here supports the conclusion that some school districts tax themselves at a high level to maintain a minimal per pupil expenditure. In other cases it is relatively easy for a district to raise money for high per pupil expenditures and still enjoy a low tax rate. However, the tax rate does not follow the same relationship to expenditure as does wealth. It can be concluded, therefore, that the aspirations of the local community become a decisive factor in determining the extent to which the local wealth is used for educational purposes.

School Expenditures. Variations in expenditure patterns for local districts exist to a large degree in all states and for all types of district organization structures. However, unified districts are more successful in reducing the amount of variation in expenditures than are non-operating, elementary, or secondary districts.

States whose overall expenditure per pupil is low do not necessarily show a high level of equalization. Likewise, states exhibiting a high degree of equalization are not necessarily spending less per pupil than states with low expenditures. Predictor models for expenditures were unique for seven of eleven cases. For the remaining four states—Colorado, Iowa, Wisconsin, and California—valuation and tax rates were the most important variables. For Colorado and Iowa valuation was the most important variable, but on the other hand, for Wisconsin and California tax rates were most important.

Foundation Aid. Foundation aid did not appear to be influencing expenditure patterns in any consistent manner and was of less importance in predicting expenditure patterns than were assessed valuation and tax rates. In about one-half of the cases, the relationship was positive and in the balance of the cases a negative or little relationship existed. In fact, the influence of foundation aid programs tended to be different in each state. The laws reflect the unique qualities of the several states and are the result of the political processes of the state. State finance programs may provide a fixed grant or may be based on a foundation formula. Further analysis of the correlation matrix for all variables in the study indicated that, in 13 of the 16 states, foundation aid was correlated in a negative manner with valuation. In seven of the 13 cases, the correlation exceeded -.85. The foundation aid program in these seven states is, therefore, making a contribution toward providing funds to districts which do not have access to local resources. How substantial this contribution is depends on the level in dollar value of this state aid.

Legislative Provisions Related to School District Reorganization

Bonded Indebtedness. Provisions in state legislation whereby the bonded indebtedness of former component districts may be assumed by a newly formed district are most effective in encouraging school district reorganization when they provide some type of state financial assistance for debt retirement and/or provide optional procedures for presenting the vote for assumption of debt to the public in such a way that the outcome of such an election does not affect the vote on the reorganization question itself. Reorganization is discouraged if legislation makes it mandatory that the newly formed district accept the bonded debt of the component districts without any state assistance in retiring such debt. School district reorganization is encouraged in states where there is a provision granting special state aid on principal or interest incurred for debt from building construction resulting from school district reorganization.

Special Fiscal Programs. Special fiscal programs have served to both encourage and discourage school district reorganization. Fiscal features providing state assistance to non-operating school districts for paying tuition costs to another district have tended to discourage reorganization. Also, provisions granting special assistance for financially distressed districts discourage reorganization when they assist small, inadequate districts to exist. On the other hand, features providing special aid assistance for financially distressed districts may encourage reorganization if they are designed: (1) to protect viable districts in temporary trouble; (2) with minimum standards for receiving such aid; (3) in such a way as to assist in eliminating the debt of districts willing to reorganize.

Incentive Aids. Incentive aid providing some type of "bonus" money to districts willing to reorganize is effective in stimulating reorganization activity if the dollar amount is sufficiently high to indeed be a bonus, and if it is based on contemporary educational costs. If the reorganized district is in danger of losing this additional money after a period of time and this loss would create a financial hardship for the district, the bonus feature may actually discourage reorganization.

Transportation. State money provided for transportation aid generally encourages school district reorganization. The degree of encouragement depends to a certain extent upon the level of reinbursement and the methods used for the computation of transportation costs. In some states, for example, where upper limits for reimbursement exist, the transportation aid program tends to cancel some of the equalizing effect of the foundation aid program. In some cases neighboring districts may be reluctant to assume this additional obligation in the event of a merger. Transportation aid seems to be especially effective in situations where it provides a high percentage of the costs or where it is specifically designed to encourage certain types of reorganization. In Maine, for example, where the thrust is to encourage reorganization around municipal areas, district schools had to pay transportation costs but municipal schools did not. Colorado, where the state pays up to 70 percent of actual cost, and Michigan, where the state pays up to 75 percent, serve as examples of where a high percentage support level has a strong encouraging effect on reorganization.

Foundation Aid Programs. As is true with special fiscal programs, foundation aid programs have features which tend to both encourage and discourage school district reorganization. Reorganizations may be encouraged if the provisions of the state foundation program guard against a newly formed district receiving less money in foundation aid than the total amount that the former component districts would have received had they remained independent.

Foundation features giving wealthy districts enough basic aid so they can operate with a low tax levy discourage reorganization with another school district, especially if this reorganization would jeopardize their favored financial position. It is also evident that provisions written into the foundation program specifically designed to financially punish small school districts are not generally used to encourage reorganization. The philosophy seems to be that "punitive" measures are not the most appropriate for districts that are already confronted with a host of financial and organizational problems.

Minimum Program Standards. Minimum program standards established for receiving foundation aid are generally ineffective due both to the lack of enforcement and the provisions written into the law which allow inadequate school districts to circumvent the intent of the standards. Where minimum program standards for receiving state aid are enforced, inadequate school districts are encouraged to reorganize into districts which will at least meet the criteria for receiving such aid.

Sparsity Factors. Foundation aid specifically containing a correction factor for sparsity of population discourages reorganization only when it perpetuates small, inadequate districts. Where reorganization is unrealistic or impossible, correction factors for sparsity should result in a large enough support program so students can receive an adequate education. Financial incentives benefiting districts of a certain size or class generally are not an effective stimulant to reorganization. One of but four states reporting such a benefit indicated it had no influence, and in the other three, it was actually considered to discourage school district reorganization. If this type of financial provision is to be utilized as an incentive to reorganization, it should be modeled after the former Pennsylvania provision which not only classified each district by population and then paid supplemental aid on the basis of classification, but also paid additional amounts when different jointures or mergers took place.

Special Education. State funds made available to local school districts for purposes of carrying on special education programs seem to have no impact on reorganization. The need for special education services is becoming so generally accepted that the distribution of such aid is usually state-wide and to a great extent, non-discriminatory. As a result, it seems to have little relevance for discussions on school district reorganization.

Legal Procedures. State, county, and local planning committees authorized by state legislatures to play a major role in planning for school district reorganization are important in stimulating reorganization activity.

School district reorganization is encouraged also by the removal of restrictive voting and petitioning procedures. In states where only freeholders have been allowed to petition, certain segments of the population have been effectively removed from the right to stimulate reorganization activity. State laws allowing a low percentage of the electors, e.g., ten to twenty percent, to petition for reorganization proceedings tend to encourage such reorganization. Voting procedures themselves can be a deterrent to reorganization. Statutes providing for a majority vote in each component district are more restrictive and discourage reorganization more than provisions calling for a majority vote of the combined component districts.

Reorganizing "Packages." Another important conclusion of this study is that only occasionally is it a single legislative provision or financial feature that is given credit for providing major impetus for school district reorganization. More often, it has been a combination of factors or a total legislative "package" that has been assembled which encourages reorganization activity. It is also evident that very similar pieces of legislation or financial features do not have the same impact in one state that they may have in another. States must develop legislative programs suitable to the situation or climate in their state.

Another conclusion is that over a period of time a certain provision does not always have the same impact. Even if a feature has a strong initial impact, it may lose its effectiveness as conditions change.

Mandatory Legislation. Mandatory legislation providing for the dissolution of non-operating and ungraded, one-room schools has been effective in accomplishing school district reorganization. Some states have gone a step further and have added financial assistance plans to the mandatory legislation to accelerate school district reorganization.

Federal Intervention. Federal legislation and court action dealing with the segregation issue has influenced school district reorganization in certain states. This has been especially true where such issues as the structuring of school district boundary lines and the placement of school buildings within the districts have been involved. The timing of reorganization itself has also been affected. In instances where states have been forced to comply with Federal regulations by a certain time limit, reorganization has been encouraged. In a few instances, Federal action has discouraged reorganization as people have been reluctant to submit to changes in school district structure which would result in differences of a pronounced nature in the racial, social, or economic composition of their school district. This has resulted in strenuous effort being expended to circumvent reorganization procedures.

Another example where Federal and state legislation has tended to encourage reorganization is found in those instances where programs requiring cooperation between districts have laid the groundwork for later consolidation. For instance, certain programs established by the Elementary and Secondary Education Act of 1965 (P.L. 89-10) have required cooperation between districts to receive special types of funds.

Federal monies distributed through programs for impacted areas often adversely affect school district reorganization. In some instances, tiny federally supported districts have been created. In other cases, the Federal dollars have given existing districts some financial advantage over their neighbors and thus discouraged reorganization.

Professional Personnel Provisions. State-wide laws regarding retirement, tenure, and certification tend to encourage school district reorganization. Conversely, multiple systems within states interfere with changes in school district boundaries, because the earned rights of teachers, such as equity in a retirement system, may be adversely affected. The problem is especially acute in metropolitan areas where large cities have different provisions than the immediate surrounding districts. Combining all or part of the city with the suburbs in these cases is especially troublesome. Also, school consolidations across state boundaries are extremely difficult because of tenure, certification, and retirement. Again, metropolitan areas are genuinely affected.

Regional Education Agencies

School district reorganization has been extensive in a large majority of states since World War II, with a broader tax base and a larger pupil population as primary objectives. The intermediate school unit has been restructured during that same period to broaden the pupil population base for specialized educational services. After an examination of the effects of various tax plans in this study, it is clear that a broader tax base could be utilized through a regional organization to reduce the disparities in resources available at the local level that would preserve the identity and the autonomy of the local district.

Economic planning regions created within states since 1966 are useful for educational purposes. These regions escape many of the limitations that are characteristic of county and intermediate units because they are larger and include Standard Metropolitan Statistical Areas. It seems appropriate that educational planning for natural socio-economic units should include complete Standard Metropolitan Statistical Areas. For the purposes of this study it was judged that the economic planning regions were feasible units to use as regional tax bases.

The greatest variation in assessed valuation per pupil between districts within regional areas was found in rural areas in some states and in urban areas in other states. This evidence suggests the existence of tax havens in both urban and rural regions, and that both areas contain serious disparities in resources available for education. Local districts which were making the greatest effort to support schools could benefit from regional tax plans as tested in the seven models in this study. An examination of the potential changes in tax rates indicates that the size of the decreases would exceed the size of the increases.

In Model Five, which permitted a shift to the region of costs that fell below the weighted mean of the region, a larger number of districts experienced tax decreases than Models One through Four, in which a part or all local costs were shifted to the regional tax base. Low expenditure districts were forced to help pay a greater share of the high levels of expenditure in other districts under Models One, Two, Three, and Four, whereas the high expenditure districts, under Model Five, paid a greater share of the costs that were shifted to the region. Low expenditure districts experienced increases in tax rates without any increases in available resources at the local level.

Equalization of resources was an objective of the examined models, as well as an objective of the existing state aid programs. An analysis of changes in tax rates on property (the major revenue resource for local districts) for Models Four, Five, and Six showed a greater direct relationship to assessed valuation than to state aid payments. (Of course, Model Seven was related entirely to the assessed valuation in the districts.) This seems to indicate that state aid payments equalize resources to a lesser degree within a region than did the tax plans under consideration.

Sixty percent of the 144 districts representing the three largest districts in each region experienced decreases in tax rates in Model Four. Sixty-five percent of these same districts experienced decreases under Model Five and fifty-six had decreases under Model Six. Considering the relationship of the total pupil populations in these districts to the total pupil population in the respective regions, it appeared that a majority of the pupils would be benefited if Models Three, Four, Five, or Six were to be implemented.

Model Five, which permitted a shift to the region of costs that fell below the weighted mean for the region, resulted in greater tax relief for the low expenditure districts than it did for the high expenditure districts. Therefore, it was determined that the adoption of this model would best achieve the objective of raising the resources behind each pupil in the low expenditure districts where the needed resources were most limited.

The property tax base was not evenly distributed from region to region within the states. It appears, therefore, that true equalization of resources for each pupil would have to be accomplished through state aid distribution systems. These systems, in order to compensate for the existing inequities, would require minimum and maximum aid payments that would fully recognize the total range or variation in the combined local and regional resources available for each pupil.

A vast array of legal provisions, administrative regulations, and financial factors all but preclude any district reorganization which combines all or any part of a large city school district with a nearby suburb. For example, the Constitution in Colorado states that the City and County of Denver shall forever be one school district. Since the annexation of incorporated villages and towns in Colorado is difficult to achieve (especially when school districts are also affected), a constitutional change would be needed to make major revisions in school district boundaries.

Density factors for large cities provide additional revenue which is often needed; however, it weakens the case for school district reorganization. Cities can no longer qualify for density aid in some states when more sparsely populated suburbs are included in the calculations.

Inadequate categorical aids for high cost programs, such as compensatory education, discourage reorganizations involving central cities. Since there is normally a concentration of need for such programs in central cities, per pupil unit costs may be exorbitantly high.

GENERALIZATIONS TO STATE FINANCE MODELS

This study has far ranging implications for educators and legislators desiring to make intelligent decisions in enacting legislation to provide effective stimulation for school district reorganization. The findings support the conclusion that only occasionally is it a single legislative provision or financial feature that is given credit for providing major impetus for school district reorganization in those states maintaining any degree of local autonomy in the reorganization process. Emphasis must be placed on developing a total legislative program or "package" which includes not only workable and understandable reorganization laws, but also financial incentives or inducements appropriate for the specific problems in each state. This last point cannot be overemphasized. It may be appropriate to adopt model laws and finance features judged effective in other states, but it is of utmost importance that they be modified to meet the particular needs of a state.

A state wishing to revise its legislative program to encourage school district reorganization may want to give consideration to the following guidelines:

1. The current legislative program should be thoroughly examined to determine its effect on school district reorganization. Perhaps the basic framework for a good legislative program already exists and with just a few modifications can be improved upon to the

point where it stimulates reorganization. At the very least, those provisions which retard or discourage reorganization must be revised.

2. State and local reorganization committees or commissions should be established to provide leadership and organization to the reorganization process. In states where they have been established and given some actual authority, reorganization has been stimulated. The law should specifically define the responsibility of such groups as well as of other people officially involved in the reorganization process.

3. Statewide studies should be undertaken by either established commissions or professional agencies to determine the extent of the reorganization problem. From these comprehensive studies, a master plan should evolve, taking into consideration state as well as local needs.

4. Legislation should be easily interpreted by all concerned people, lay as well as professional, and should be easy to implement.

5. The regulations developed for the process of reorganization should be clearly defined. Criteria and minimum standards should not only be clearly understood, but must be enforced if they are to be effective.

6. The development of plans, criteria for reorganization, and eventual legislation should involve maximum citizen participation on a state and local level.

7. Equitable voting procedures should be established. The criteria should not discriminate against any group of people nor should it give more voting strength to certain districts. Principles of the "one man, one vote" concept should be followed.

8. Reorganization should result in an equalization of school support throughout the state as much as geographically possible.

9. Those states wishing to encourage reorganization through the use of finance features may want to avoid the following:

   a. Non-resident tuition aid which allows non-operating districts to send their students to a district operating schools for less money than it would take to maintain their own schools

b. Aid to distressed districts in sufficient amount to allow them to maintain schools when the question exists as to whether or not they should continue to operate

c. Minimum standards for receiving state aids that are not enforced, thus providing aid to inadequate school districts

d. Features that allow unnecessary districts to circumvent the law and still receive aid

e. Sparsity correction factors that perpetuate small, inadequate districts.

10. Those states wishing to encourage reorganization through the use of finance features may want to utilize in some way variations of the following incentives:

a. Optional provisions for assumption of bonded debt including some degree of state support in retiring the debt incurred before reorganization by component districts

b. Building aid for debt incurred from school construction resulting from reorganization

c. Distressed district aid designed to assist viable, but financially troubled, districts resulting from reorganization

d. Bonus aid for reorganized districts based on per pupil allotment

e. Transportation aid designed to cover a high percentage of the actual costs or specifically encourage a certain type of reorganization

f. Provisions written into the foundation program guaranteeing a newly reorganized district no less aid than the total amount that would have been received by the component districts had they remained independent.

11. State governments should exert political pressure on Federal agencies to have impacted area funds distributed through regular state aid channels. The present system distorts school district structures and upsets equalization plans in affected states.

12. Any legislation involving the use of incentive features must maintain these features at a high enough support level so that they are indeed attractive enough to encourage reorganization. The dollar amounts must be based on realistic cost figures and should be increased as the economy demands. The same can be said for the basic legislation. Laws maintain their effectiveness only as they are appropriate for contemporary conditions. School district reorganization legislation must be kept current to be effective; stagnant legislation will impede the process of reorganization and contribute to the problem of inadequate school district organization.

13. Caution must be expressed against the use of regional taxes as substitutes for appropriate levels of state support. This warning is important because in most instances both local school districts and regional units will rely upon *ad valorem* taxes for revenue. Since this tax is notoriously regressive and badly administered, an over-dependence on it would compound existing injustices. It is no tautology to insist that the purpose of regional taxes is to achieve equality in tax rates and educational expenditures—not a diminution of state support for schools.

The interaction between state aid distribution systems and the allocation of the revenue from regional taxes is crucial, if greater equalization is to be achieved. The models tested in this study are based on the assumption that the revenue from uniform regional taxes would be distributed to local districts on the number of pupils in ADA. The state aid available to such districts would be calculated in the same manner as now exists. In other words, the revenue from the regional levy would replace a portion of the local revenues (Models One, Two, Three, Four, and Five) or would be added to the combination of state aid and local receipts (Models Six and Seven). All of the models would thus provide local school boards with the option of reducing local tax rates or increasing school expenditures.

Other assumptions about the relationship between state aids and regional taxes are clearly possible. For example, the legislature could establish the following model:

STATE AID = (FOUNDATION PROGRAM—REGIONAL SHARE) X
EQUALIZATION FACTOR

Given a foundation program of a realistic level (always a worthy goal) and a state equalization factor that would insure a genuine local effort (also a worthy goal), this model would achieve maximum cooperation between the agencies responsible for levying regional taxes and legislative appropriations for schools.

IN CLOSING

The conclusions of this study contribute to some degree of disappointment for those who have great faith in foundation aid programs as a means to equalize tax rates and school expenditures. While a share of the blame can be attributed to faulty local school district patterns, it is clear that other factors are involved. The equalizing impact of improvements in foundation aid programs are often quickly neutralized by special laws and categorical grants so that the correlation between wealth in a local school district and the total amount of state aid which it receives remains near zero. Therefore, it is clear that the "Robin Hood" philosophy of taking from the wealthy and giving to the poor has not been written into the statutes in most states. The formulas and aids found in the laws appear to be the results of political machinations which compel each legislator to be the custodian of the interest of his particular constituents. Since taxes for public schools are state taxes regardless of the level at which they are levied or collected, gross disparity in school tax rates within states may soon incur judicial displeasure and, therefore, require greater statesmanship on the part of the legislators.

Tax sharing between local school districts and regional units has potential which is grossly underdeveloped. Models which permit local districts to transfer a portion of their net current expense levy to a uniform, regional levy seem to have the greatest promise. The conceptual weakness of these models which permit high-and-low expenditure districts to transfer the same percent of their costs to the regional levy is apparent. The high expenditure districts would shift a greater tax levy to the region than the districts with more modest costs. However, the high positive correlation between wealth and expenditure levels suggests that the districts which would receive a higher dollar return from the region would also contribute more through the uniform tax levy. The variability in wealth in the 1,966 school districts in this part of this study was far greater than it was in the level of expenditure. Therefore, the locus of the equalizing factor in the regional and local tax-sharing model is in the collection rather than distribution of taxes. Moreover, this model can be improved by limiting such sharing to an amount not to exceed the mean for the region. Districts electing to spend beyond this level would generate all of the additional revenue from local taxes. Regional taxes for school purposes could be especially useful in metropolitan areas where there is generally great disparity in ability to support schools and limited access to local property taxes. While such use of *ad valorem* taxes would be an improvement over the present arrangement, the regional plan would accommodate the utilization of other taxes. For example, the regional share of school revenue could be produced by a tax on sales or income. Tax plans of this type appear to have great potential and may be more politically acceptable than totally state financed public schools. The combination of regional and local sharing combined with a healthy input of state dollars seems to incorporate the best features of all systems.

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APPENDICES

APPENDIX A

SCHOOL POPULATION ESTIMATES*

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* *Editor's note:* These estimates were prepared by Professor McLure and his staff as supporting data for Chapter 1; no attempt has been made to reconcile them with other data presented in this volume.

428

TABLE A-1

SCHOOL POPULATION ESTIMATES: UNDER 5 YEARS
(Population in Thousands)

	1970		1980	
State	*Series I-D Under 5 Yrs.*	*Series I-B Under 5 Yrs.*	*Series I-D Under 5 Yrs.*	*Series I-B Under 5 Yrs.*
Alabama	326	372	367	500
Alaska	34	39	40	55
Arizona	180	204	231	311
Arkansas	183	208	200	272
California	1,810	2,052	2,409	3,237
Colorado	188	213	228	305
Connecticut	251	284	311	418
Delaware	51	58	62	84
Dist. of Columbia	81	93	93	129
Florida	546	622	734	994
Georgia	439	500	496	676
Hawaii	72	83	76	104
Idaho	62	71	72	97
Illinois	938	1,066	1,099	1,483
Indiana	439	499	502	674
Iowa	226	257	242	324
Kansas	191	217	216	290
Kentucky	282	320	301	404
Louisiana	371	424	429	587
Maine	86	98	91	122
Maryland	348	396	431	583
Massachusetts	451	511	512	685
Michigan	756	858	872	1,174
Minnesota	327	371	377	505
Mississippi	236	270	258	354
Missouri	378	430	430	580
Montana	65	74	73	99
Nebraska	129	147	140	188
Nevada	53	60	65	87
New Hampshire	62	70	74	100

TABLE A-1 (Cont.)

SCHOOL POPULATION ESTIMATES: UNDER 5 YEARS
(Population in Thousands)

	1970		1980	
State	*Series I-D Under 5 Yrs.*	*Series I-B Under 5 Yrs.*	*Series I-D Under 5 Yrs.*	*Series I-B Under 5 Yrs.*
New Jersey	595	676	742	999
New Mexico	118	134	144	193
New York	1,515	1,719	1,757	2,366
North Carolina	463	528	514	701
North Dakota	60	68	64	85
Ohio	901	1,023	1,066	1,436
Oklahoma	206	234	226	305
Oregon	161	183	194	260
Pennsylvania	893	1,015	975	1,314
Rhode Island	74	83	81	110
South Carolina	254	290	277	380
South Dakota	63	71	66	89
Tennessee	342	390	386	522
Texas	1,056	1,200	1,239	1,671
Utah	111	125	133	178
Vermont	36	41	40	53
Virginia	425	484	502	681
Washington	252	286	300	402
West Virginia	137	155	133	180
Wisconsin	375	425	430	577
Wyoming	30	34	35	46
UNITED STATES*	17,625	20,027	20,736	27,972

*National totals are from the Census projections. State totals are computed in this study, using the proportions of ages 5-17.

Source: U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985," Table 5, Series I-D, pp. 42-49; Series I-B, pp. 26-33. October 3, 1967.

TABLE A-2

SCHOOL POPULATION ESTIMATES: 5 TO 17 YEARS
(Population in Thousands)

State	*1970*	*1980*	
	Series I-D and I-B 5 to 17 Yrs.	*Series I-D 5 to 17 Yrs.*	*Series I-B 5 to 17 Yrs.*
Alabama	988	876	1,035
Alaska	89	86	102
Arizona	512	545	639
Arkansas	536	489	576
California	5,277	5,565	6,506
Colorado	561	534	625
Connecticut	775	731	855
Delaware	151	145	170
Dist. of Columbia	195	199	236
Florida	1,624	1,740	2,042
Georgia	1,266	1,173	1,383
Hawaii	210	187	221
Idaho	199	174	203
Illinois	2,848	2,561	3,002
Indiana	1,336	1,172	1,374
Iowa	708	580	678
Kansas	582	490	574
Kentucky	853	734	860
Louisiana	1,085	1,001	1,183
Maine	257	223	260
Maryland	1,031	991	1,165
Massachusetts	1,365	1,221	1,423
Michigan	2,371	2,024	2,374
Minnesota	1,005	878	1,027
Mississippi	688	608	721
Missouri	1,154	1,013	1,189
Montana	200	173	202
Nebraska	383	325	380
Nevada	142	144	169

TABLE A-2 (Cont.)

SCHOOL POPULATION ESTIMATES: 5 TO 17 YEARS
(Population in Thousands)

State	*1970* Series I-D and I-B 5 to 17 Yrs.	*1980* Series I-D 5 to 17 Yrs.	*1980* Series I-B 5 to 17 Yrs.
New Hampshire	183	176	205
New Jersey	1,832	1,746	2,045
New Mexico	331	325	382
New York	4,565	4,173	4,868
North Carolina	1,359	1,229	1,448
North Dakota	182	148	174
Ohio	2,808	2,456	2,881
Oklahoma	621	548	642
Oregon	512	459	537
Pennsylvania	2,878	2,381	2,786
Rhode Island	219	193	225
South Carolina	737	657	776
South Dakota	189	156	183
Tennessee	1,026	914	1,076
Texas	3,059	2,851	3,340
Utah	321	302	354
Vermont	108	96	112
Virginia	1,225	1,155	1,359
Washington	786	712	831
West Virginia	446	341	398
Wisconsin	1,155	1,016	1,189
Wyoming	91	80	3,346
UNITED STATES[*]	53,026	48,694	57,084

[*] United States column totals do not match cumulative state totals due to projection technique.

Source: U.S. Bureau of the Census, *Current Population Reports,* Series P-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985," Table 5, Series I-B, pp. 26-33; Series I-D, pp. 42-49. October 3, 1967.

APPENDIX B

NATIONAL EDUCATIONAL FINANCE PROJECT

Special Study

EARLY CHILDHOOD EDUCATION

and

BASIC ELEMENTARY AND SECONDARY EDUCATION

DATA FORM I

DISTRIBUTION OF PUPILS, STAFF, AND CURRENT OPERATING EXPENDITURES BY PROGRAMS IN REGULAR SCHOOL YEAR

School Year 1968-69

School District ______________________________

Superintendent ______________________________

Address ______________________________

____

Section I Pupil Enrollment (average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
1. Number Days in Regular School Year (Exclude Summer School)	______	______	______	______	______	
2. Length of Average Full-Day Program: Hours and Minutes	______	______	______	______	______	
3. Gross Total Enrollment (Head Count) of Pupils in ADM	______	______	______	______	______	______
4. Total Number Full-Time Equivalent (FTE=Full-Day) Pupils in ADM	______	______	______	______	______	______
5. Estimated Number of Qualified Persons not in Respective Programs	______	______	______	______	______	______
6. Special Programs:						
(1) Pre-Kindergarten						
a. Total Enrollment (Head Count) in ADM	______					______
b. Total FTE Pupils in ADM	______					______
c. Estimated Number Qualified Children not in Pre-Kindergarten	______					______

	Grade or Program Level					
Section I (Cont.) Pupil Enrollment (average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)	*Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
(2) Kindergarten						
a. Total Enrollment (Head Count) in ADM	________	- - - - - -	- - - - - -	- - - - - -	- - - - - -	________
b. Total FTE Pupils in ADM	________	- - - - - -	- - - - - -	- - - - - -	- - - - - -	________
c. Estimated Number Qualified Children not in Kindergarten	________	- - - - - -	- - - - - -	- - - - - -	- - - - - -	________
(3) Special Classes for Mentally and Physically Handicapped						
a. Total Enrollment (Head Count) in ADM	________	________	________	________	________	________
b. Total FTE Pupils in ADM	________	________	________	________	________	________
c. Estimated Number Qualified Persons not in these Classes	________	________	________	________	________	________
(4) Programs for Socially Maladjusted						
a. Resident-Institutional (Detention) Schools						
(a) Total Enrollment Head Count in ADM	________	________	________	________	________	________

Section I (Cont.) Pupil Enrollment (average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
(b) Total FTE Pupils in ADM						
(c) Estimated Number Qualified Persons not in These Programs						
b. Programs of Special Classes, Intensive Therapy and Counseling						
(a) Total Enrollment Head Count in ADM						
(b) Total FTE Pupils in ADM						
(c) Estimated Number Qualified Persons not in These Programs						
(5) Remedial and Compensatory Programs for Other Learning and Developmental Difficulties (Including Hospitals and Home Bound)						
a. Total Enrollment (Head Count) in ADM						
b. Total FTE Pupils in ADM						

Section I (Cont.) Pupil Enrollment (average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
c. Estimated Number Qualified Persons not in These Programs	____	____	____	____	____	____
(6) Vocational-Technical Education Classes Qualifying for Federal Reimbursement						
a. Total Enrollment (Head Count) in ADM	------------	------------	____	____	____	____
b. Total FTE Pupils in ADM	------------	------------	____	____	____	____
c. Estimated Number Qualified Persons not in These Classes	------------	------------	____	____	____	____
(7) Total Enrollments of Pupils in Day School Special Programs						
a. Total Head Count in ADM (Sum of (1)a, (2)a, (3)a, (4)a(a), (4)b(a), (5)a, (6)a	____	____	____	____	____	____
b. Total FTE Pupils in ADM (Sum of (1)b, (2)b, (3)b, (4)a(b), (4)b(b), (5)b, (6)b	____	____	____	____	____	____

Section I (Cont.) **Pupil Enrollment (average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)**	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
c. **Total Estimated Number Qualified Persons not in Special Programs** (Sum of (1)c, (2)c, (3)c, (4)a(c), (4)b(c), (5)c, (6)c	______	______	______	______	______	______
7. **Total Net Enrollment of Pupils in Basic Day School Programs**						
(1) **Total Enrollment (Head Count) in ADM (Item 3 Minus Item 6(7)a)**	______	______	______	______	______	______
(2) **Total Number FTE Pupils in ADM (Item 4 Minus Item 6(7)b)**	______	______	______	______	______	______
(3) **Estimated Number of Qualified Persons not in Basic Programs (Item 5 Minus items 6(7)c)**	______	______	______	______	______	______

Section II Academic Staff (Certificated) Employed and on the Job: Express as Full-Time Equivalents (FTE) to Nearest 0.1 of Full Work Load	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First* Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
8. Total Number Classroom Teachers (FTE) in All Day School Programs Serving Pupils in Item 3 of Section I	____	____	____	____	____	____
9. Total Number of Classroom Teachers (FTE) in Special Programs Serving Pupils in Item 6 of Section I						
(1) Pre-Kindergarten Pupils in 6(1)	____	………	………	………	………	____
(2) Kindergarten Pupils in 6(2)	____	………	………	………	………	____
(3) Programs for Handicapped Pupils in 6(3)	____	____	____	____	____	____
(4) Programs for Socially Maladjusted Pupils in 6(4)	____	____	____	____	____	____
(5) Remedial and Compensatory Programs in 6(5)	____	____	____	____	____	____
(6) Voc-Tech Education Programs in 6(6)	………	………	____	____	____	____
(7) Total Number Classroom Teachers (FTE) Serving Pupils in Special Programs in Item 6(7)a	____	____	____	____	____	____
10. Net Total Classroom Teachers (FTE) Basic Programs. Item 8 Minus 9(7)	____	____	____	____	____	____

Section II (Cont.)	*Grade or Program Level*					
Academic Staff (Certificated) Employed and on the Job: Express as Full-Time Equivalents (FTE) to Nearest 0.1 of Full Work Load	*Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
11. Total Non-Teaching Academic (Certificated) Staff in FTE Serving Pupils in Item 3 of Section I (Express FTE to Nearest 0.1 of Full Work Load), plus Teacher Aides.						
Total of Following six Categories						
(1) Administrative and Supervisory Staff: Supt., Asst. Supt., Principals, Supervisors						
(2) Counselors						
(3) Psychologists and Social Workers						
(4) Librarians						
(5) Research and Curriculum Workers						
(6) Teacher Aides						
12. Grand Total Academic (Certificated) Staff in FTE (Item 8 Plus Item 11)						

Section II (Cont.) Academic Staff (Certificated) Employed and on the Job: Express as Full-Time Equivalents (FTE) to Nearest 0.1 of Full Work Load		*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to—*	*Middle or Jr. Hi. Grades — to—*	*High School Grades — to—*	*Unassigned to Grade Level*	*Total*
13. Allocation of Non-Teaching Academic Staff Time (FTE) Among Special Programs:	Example for Program No. (5)	1.0a 2.5c	1.5a 2.5b 4.5c	1.0a 2.0b 3.5c			
Staff	*Program*						
a. Adm.-Supv.	(1) Pre-Kindergarten						
b. Counselors	(2) Kindergarten						
c. Psychologists and Social Workers	(3) Handicapped						
d. Librarians	(4) Socially Maladjusted						
e. Research and Curriculum	(5) Remedial and Compensatory						
f. Teacher Aides	(6) Voc-Tech						
14. Total Classroom Teachers (FTE) in Item 8 Employed During Summer (or on 12-Months' Basis) for Planning, Curriculum Work, etc., in Connection with Regular School Year *but not* for Operation of Summer School. Use Number Days of Regular School Year to Compute FTE's							

Section II (Cont.) Academic Staff (Certificated) Employed and on the Job: Express as Full-Time Equivalents (FTE) to Nearest 0.1 of Full Work Load	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to—*	*Middle or Jr. Hi. Grades —to—*	*High School Grades —to—*	*Unassigned to Grade Level*	*Total*
15. Total Non-Teaching Academic Staff (FTE) Employed During Summer Similar to Teachers in Item 14 (e.g., Superintendent, Other Central Office Staff, etc.)						

Section III Non-Academic Staff (FTE) Employed and on the Job. Express FTE to Nearest 0.1 of Full Work Load	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to—*	*Middle or Jr. Hi. Grades —to—*	*High School Grades —to—*	*Unassigned to Grade Level*	*Total*
16. Number (FTE) Employees for Health Service: Doctors, Nurses, and Others						
17. Number (FTE) Clerks, Secretaries, Statisticians						
18. Security Officers						
19. Number (FTE) Employees for Operation and Maintenance of School Plants						
20. Number (FTE) Employees for Food Service						

Section III (Cont.)	Grade or Program Level					
Non-Academic Staff (FTE) Employed and on the Job. Express FTE to Nearest 0.1 of Full Work Load	*Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
21. Number (FTE) Employees for Transportation of Pupils						
22. Total Number (FTE) Non-Academic Staff						
23. Total Number of Non-Academic Staff (FTE) Employed During Summer for Year-Round Functions *but not* for Operation of Summer School (Use Number of Days in Regular School Year as Basis for Computing FTE's)						
(1) Health Service						
(2) Clerical, Secretarial, Statistical Services						
(3) Operation and Maintenance of School Plants						
(4) Transportation (Repair and Maintenance of Equipment)						
(5) Other						
(6) Total						

Section IV (Cont.) Distribution of Current Operating Expenditures (Excluding Capital Outlay and Debt Service for Capital Outlay). For the Regular School Year Shown in Item 1, Section I	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to—*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
24. Total Salaries Paid to Classroom Teachers (individuals) Shown in Item 8 of Section II for Regular School Year	$______	$______	$______	$______	$______	$______
25. Total Salaries Paid to Teachers Shown in Item 14 of Section II for Extended Year Work	______	______	______	______	______	______
26. Total Salaries Paid to Non-Teaching Academic Staff Shown in Item 11 of Section II for Regular School Year	______	______	______	______	______	______
27. Teacher Aides	______	______	______	______	______	______
28. Total Salaries Paid to Non-Teaching Academic Staff (FTE) Shown in Item 15 of Section II for Extended Year Work	______	______	______	______	______	______
29. Total Salary Payments to Persons on Leave of Absence and to Substitutes for Daily Absences of Staff (for Persons not Counted in Items 8 and 11 of Section II)	______	______	______	______	______	______

Section IV (Cont.) Distribution of Current Operating Expenditures (Excluding Capital Outlay and Debt Service for Capital Outlay). For the Regular School Year Shown in Item 1, Section I	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
30. Total Salary Payments to Academic (Cert.) Staff and Substitutes (Sum of Items 24, 25, 26, 27, 28, 29)	$ ______	$ ______	$ ______	$ ______	$ ______	$ ______
31. Total Payments for Social Security and Retirement (Exclude Contributions of Employees)	______	______	______	______	______	______
32. Grand Total Payments for Salaries of Academic Staff, Substitutes, and Retirement Benefits (Including Persons Employed 12 Months but not for Summer School)	______	______	______	______	______	______
33. Current Operating Expenses in Addition to Salary Payments Shown in Item 32. (Show Allocations by the Following Categories if Program Budgeting Permits, Otherwise Show Estimates Where Possible.)						
(1) Administration and General Control a. Central Office (	______	______	______	______	______	______
(C°	______	______	______	______	______	______

Section IV (Cont.)	*Grade or Program Level*					
Distribution of Current Operating Expenditures (Excluding Capital Outlay and Debt Service for Capital Outlay). For the Regular School Year Shown in Item 1, Section I	*Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
b. Security Officers	$______	$______	$______	$______	$______	$______
(2) Salary Payments to Clerks, Stenographers, and Other Non-Academic Aides for Instruction, excluding Teacher Aides (see 27 for them). (	______	______	______	______	______	______
(C*	______	______	______	______	______	______
(3) Instructional Supplies and Equipment (Exclude Major Capital Equipment) (	______	______	______	______	______	______
(C*	______	______	______	______	______	______
(4) Operation and Maintenance of Plant (Include Salaries of Personnel, Materials and Supplies. Exclude Major Replacements and Renovations.) (	______	______	______	______	______	______
(C*	______	______	______	______	______	______
(5) Transportation (Include Salaries of Personnel, Operation of Equipment and Depreciation on District-Owned Equipment) (	$______	$______	$______	$______	$______	$______
(C*	______	______	______	______	______	______

Section IV (Cont.)	*Grade or Program Level*					
Distribution of Current Operating Expenditures (Excluding Capital Outlay and Debt Service for Capital Outlay). For the Regular School Year Shown in Item 1, Section I	*Kindergarten, Nursery, Other Pre-First Grade*	*Elementary Grades 1 to—*	*Middle or Jr. Hi. Grades — to—*	*High School Grades — to—*	*Unassigned to Grade Level*	*Total*
(6) Other Auxiliary Services (Include Salaries and Other Expenses) (	$______	$______	$______	$______	$______	$______
(C*	______	______	______	______	______	______
(7) Fixed Charges (Insurance, Debt Service for Cash Flow, Utilities, etc.)	______	______	______	______	______	______
(8) Community Services (Recreation Programs, Driver Training, etc.)	______	______	______	______	______	______
(9) Total Payments for Social Security and Retirement of Non-Academic Staff (Exclude Contributions of Employees)	______	______	______	______	______	______
(10) Total Current Operating Expenses Other Than Salary Payments in Item 30, Section IV	______	______	______	______	______	______
34. Grand Total Current Operating Expenses. Item 32 Plus Item 33(10). Summer School Expenditures to be Shown in Data Form II	______	______	______	______	______	______

NOTE: In extra lines marked C*, show expenses for contractual services by outside agencies; e.g., computerized accounting, transportation etc.

APPENDIX C

NATIONAL EDUCATIONAL FINANCE PROJECT

Satellite Projects

EARLY CHILDHOOD EDUCATION
and
BASIC ELEMENTARY AND SECONDARY EDUCATION

DATA FORM II

SUMMER SCHOOL (EXTENDED YEAR) PROGRAMS

Summer 1968

School District ______________________________

Superintendent ______________________________

Address ______________________________

____

Section I Pupil Enrollment (ADM) in Summer Programs	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
1. Number Days in Summer Programs	____	____	____	____	____	
2. Length of Average Full-Day Program: Hours and Minutes	____	____	____	____	____	
3. Gross Total Enrollment (Head Count) of Pupils in ADM	____	____	____	____	____	____
4. Total Number Full-Time Equivalent (FTE-Full-Day) Pupils in ADM	____	____	____	____	____	____
5. Estimated Number of Qualified Persons in Need of Respective Programs	____	____	____	____	____	____
6. Special Programs:						
(1) Pre-Kindergarten:						
a. Total Enrollment (Head Count) in ADM	____					____
b. Total FTE Pupils in ADM	____					____
c. Estimated Number of Qualified Persons not in Programs	____					____

Section I (Cont.) **Pupil Enrollment (ADM) in Summer Programs**	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	 *Elementary Grades 1 to —*	 *Middle or Jr. Hi. Grades — to —*	 *High School Grades — to —*	 *Unassigned to Grade Level*	 *Total*
(2) Kindergarten:						
a. Total Enrollment (Head Count) in ADM	______	………	………	………	………	______
b. Total FTE Pupils in ADM	______	………	………	………	………	______
c. Estimated Number of Qualified Persons not in Programs	______	………	………	………	………	______
(3) Special Classes for Mentally and Physically Handicapped:						
a. Total Enrollment (Head Count) in ADM	______	______	______	______	______	______
b. Total FTE Pupils in ADM	______	______	______	______	______	______
c. Estimated Number Qualified Persons not in Programs	______	______	______	______	______	______
(4) Programs for Socially Maladjusted:						
a. Total Enrollment (Head Count) in ADM	______	______	______	______	______	______

Section I (Cont.) Pupil Enrollment (ADM) in Summer Programs	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
b. Total FTE Pupils in ADM	______	______	______	______	______	______
c. Estimated Number Qualified Persons not in Programs	______	______	______	______	______	______
(5) Remedial and Compensatory Programs for Other Learning and Developmental Difficulties (Repeaters and others receiving extra instruction):						
a. Total Enrollment (Head Count) in ADM	______	______	______	______	______	______
b. Total FTE Pupils in ADM	______	______	______	______	______	______
c. Estimated Number Qualified Persons not in Programs	______	______	______	______	______	______
(6) Vocational-Technical Education Classes Qualifying for Federal Reimbursement:						
a. Total Enrollment (Head Count) in ADM	....	....	______	______	______	______
b. Total FTE Pupils in ADM	....	....	______	______	______	______

Section I (Cont.) Pupil Enrollment (ADM) in Summer Programs	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to—	Middle or Jr. Hi. Grades — to—	High School Grades — to—	Unassigned to Grade Level	Total
c. Estimated Number Qualified Persons not in These Classes						
(7) Total Enrollments of Pupils in Summer Special Programs:						
a. Total Head Count in ADM (Sum of (1)a, (2)a, (3)a, (4)a, (5)a, and (6)a.						
b. Total FTE Pupils in ADM (Sum of (1)b, (2)b, (3)b, (4)b, (5)b, and (6)b.						
c. Total Estimated Number Qualified Persons not in Special Programs (Sum of (1)c, (2)c, (3)c, (4)c, (5)c, and (6)c						
7. Total Net Enrollment of Pupils in Basic Summer School Programs:						
(1) Total Enrollment (Head Count) in ADM (Item 3 Minus Item 6(7)a.						
(2) Total Number FTE Pupils in ADM Item 6(7)b.						

Section I (Cont.) **Pupil Enrollment (ADM) in Summer Programs**	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
(3) Estimated Number of Qualified Persons not in Basic Summer Programs (Item 5 Minus Item 6(7)c.						

Section II **Academic Staff (Certificated) Employed: Express as FTE to Nearest 0.1 of Full Work Load**	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
8. Total Number Classroom Teachers (FTE)						
9. Total Number Classroom Teachers (FTE) in Special Summer Programs:						
(1) Pre-Kindergarten						
(2) Kindergarten						
(3) Programs for Mentally and Physically Handicapped						
(4) Socially Maladjusted						
(5) Remedial and Compensatory Programs						

Section II (Cont.) Academic Staff (Certificated) Employed: Express as FTE to Nearest 0.1 of Full Work Load	*Grade or Program Level* *Kindergarten, Nursery, Other Pre-First Grade*	 *Elementary Grades 1 to —*	 *Middle or Jr. Hi. Grades — to —*	 *High School Grades — to —*	 *Unassigned to Grade Level*	 *Total*
(6) Voc-Tech Programs	----------	----------	______	______	______	______
(7) Total Number Classroom Teachers (FTE) in Special Summer Programs (Sum of 9(1) through 9(6).)	______	______	______	______	______	______
10. Net Total Classroom Teachers (FTE) in Basic Summer Programs: Item 8 Minus Item 9(7)	______	______	______	______	______	______
11. Total Non-Teaching Academic Staff (Certificated) in FTE Serving Pupils in Summer Programs	______	______	______	______	______	______
12. Grand Total Academic Staff (FTE) in Summer Programs	______	______	______	______	______	______

Section III Non-Academic Staff (FTE) Employed in Summer Programs (Exclude Staff Shown in Data Form I Employed in Summer for Year-Round Functions)	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
13. Number FTE Employees for Health Service: Doctors, Nurses, Others	______	______	______	______	______	______
14. Number FTE Clerks, Secretaries, Statisticians, Non-Certificated Teacher Aides	______	______	______	______	______	______
15. Number FTE Employees for Operation and Maintenance of Plants	______	______	______	______	______	______
16. Number FTE Employees for Food Service	______	______	______	______	______	______
17. Number FTE Employees for Transportation of Pupils	______	______	______	______	______	______
18. Total Number (FTE) Non-Academic Staff for Operation of Summer Programs (Do Not Include Staff Counted in Data Form I Employed in Summer for Year-Round Functions Associated with Regular School Year)	______	______	______	______	______	______

Section IV Current Operating Expenditures in Summer Programs	*Grade or Program Level*					
	Kindergarten, Nursery, Other Pre-First Grade	*Elementary Grades 1 to —*	*Middle or Jr. Hi. Grades — to —*	*High School Grades — to —*	*Unassigned to Grade Level*	*Total*
19. Total Salaries of Teachers in Item 8						
20. Total Salaries for Non-Teaching Academic Staff in Item 11						
21. Total Salaries of Non-Academic Staff in Item 18						
22. All Other Current Operating Expenditures for Summer Programs						
23. Total Current Operating Expenditures for Summer Programs (Sum of Items 19, 20, 21, and 22)						

APPENDIX D

NATIONAL EDUCATIONAL FINANCE PROJECT

Satellite Projects

EARLY CHILDHOOD EDUCATION
and
BASIC ELEMENTARY AND SECONDARY EDUCATION

DATA FORM III

PART-TIME PROGRAMS FOR ADULTS AND SCHOOL DROPOUTS

School Year 1968-69

School District ______________________________

Superintendent ______________________________

Address ______________________________

____

~~460~~

Items only for Part-Time Programs for Adults and School Dropouts	*Elementary*	*Secondary*	*Post-Secondary*	*Total*
1. School Year: Number of Days				
2. Total Enrollment (Head Count) in ADM				
3. Total Number FTE Pupils (Use Average Full-Day Course Credit Load as Basis for FTE)				
4. Total Number FTE Pupils in Item 3 in Vocational-Technical Classes Qualifying for Federal Reimbursement				
5. Net Total Number FTE Pupils in Item 3 in Basic Education Classes (Item 3 Minus Item 4)				
6. Total Number Classroom Teachers (FTE)				
(1) Total Number Classroom Teachers (FTE) in Vocational-Technical Education Classes				
(2) Total Number Classroom Teachers (FTE) in Basic Education Classes (Total Minus (1))				
7. Total Number Non-Teaching Academic Staff (FTE) (Administrators, Supervisors, Counselors, etc.)				
8. Total Non-Academic Staff (FTE) (Secretarial, Clerical Custodians, Others)				
9. Current Operating Expenditures:				
(1) Total Salaries for Teachers Shown in Item 6	$	$	$	$

Items only for Part-Time Programs for Adults and School Dropouts	*Elementary*	*Secondary*	*Post-Secondary*	*Total*
(2) Total Salaries for Non-Teaching Academic Staff in Item 7	________	________	________	________
(3) Total Salaries for Non-Academic Staff Shown in Item 8	________	________	________	________
(4) All Other Current Operating Expenditures	________	________	________	________
10. Total Current Operating Expenditures (Sum of Item 9 Sub-Items (1), (2), (3), (4).)	$________	$________	$________	$________